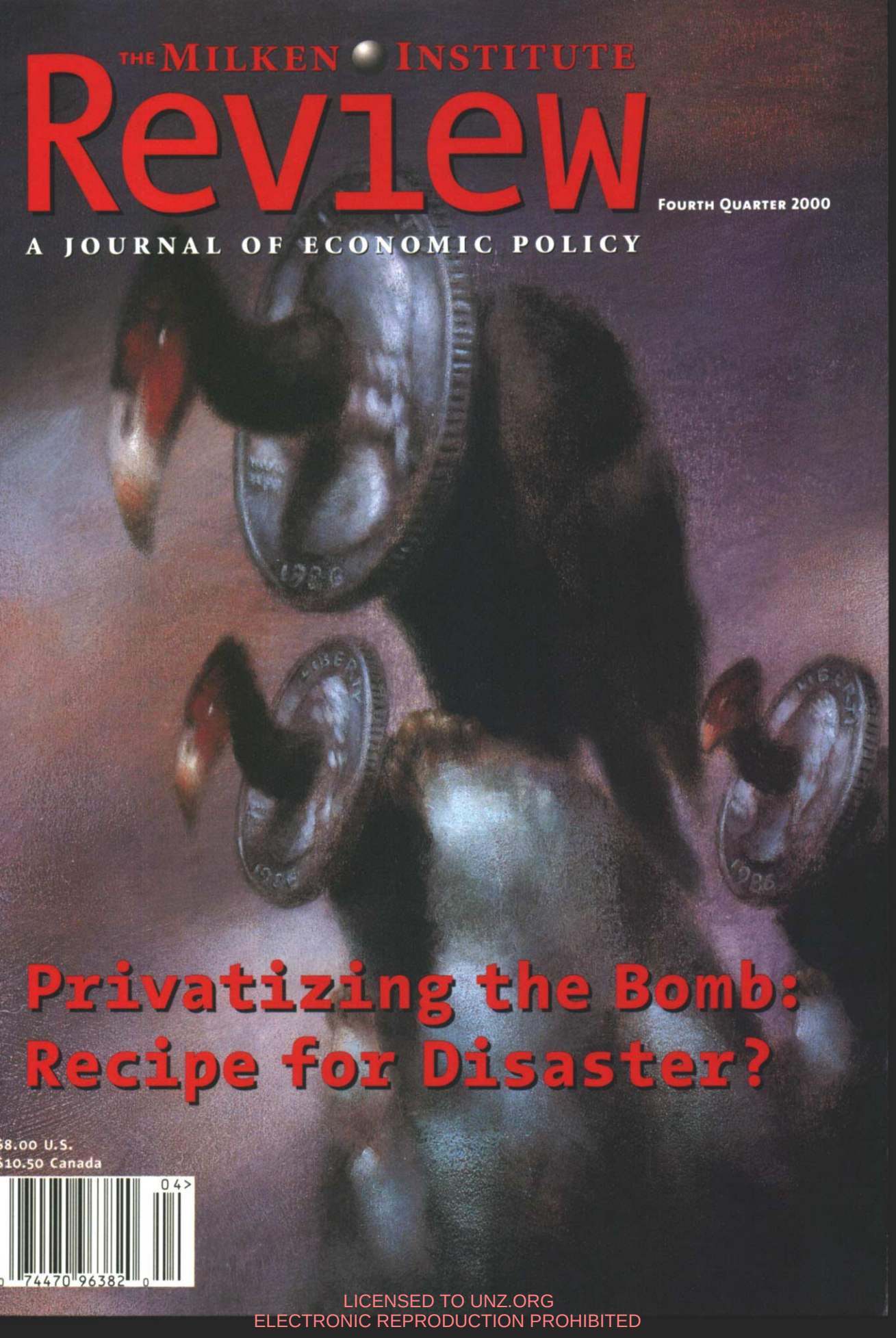
THE MILKEN INSTITUTE

Review

FOURTH QUARTER 2000

A JOURNAL OF ECONOMIC POLICY



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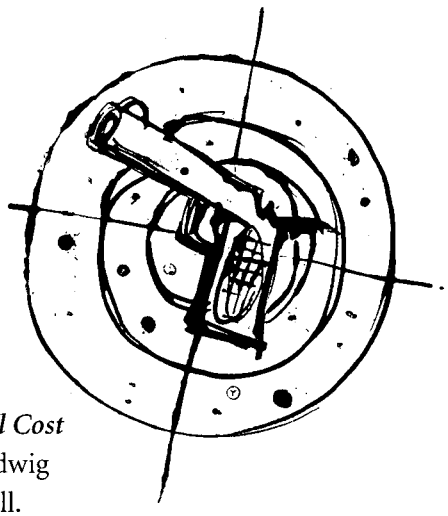

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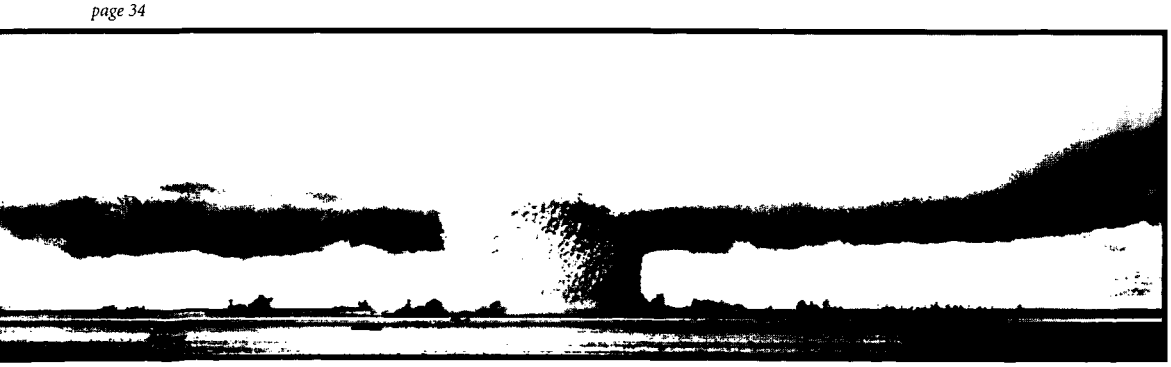

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Yes, the leaves have fallen, daylight savings time is a fond memory and millions of turkeys are clucking nervously in their cages. No, I'm not going to bore you with an essay on the changing of the seasons – not when I can brag about an issue that's jam-packed with economics, politics and even a little blood and guts.

Albert Fishlow, a partner in the Violy Byorum investment bank, takes a whack at anti-globalism in general, and anti-IMF sentiments in particular. This isn't the first piece of this sort that we've published. But Fishlow is more eloquent than most. "To reduce income inequality in developed countries and to end poverty in the poorest ones," he writes, "the naysayers are going to have to grow up. Globalization is the only game in town."

Richard Falkenrath, of Harvard's Kennedy School of Government, offers the latest on a shocking but little-known story of high diplomacy and low special-interest economics – the story of how Congress and the White House (with help from the tassled-loafer crowd) have flubbed the most important nuclear anti-proliferation initiative of the post-cold war era. And how, in their efforts to save political face and make assorted richies a little richer, they've dug themselves into a policy hole that will be hell to get out of.

Thanks to their bumbling, the United States is in danger of losing the opportunity to purchase hundreds of tons of surplus weapons-grade uranium, the active ingredient from thousands of Russian nuclear warheads. Why, you might ask? Because an effective policy for importing and consuming Russian uranium would undermine the profitability of the relatively small domestic industry that produces fuel for nuclear power plants.

Actually, it's a little more complicated than that. But not a whole lot more: read Falkenrath, and you'll know whom to blame when terrorists turn lower Manhattan or northwest Washington into a pile of radioactive cinders. Or don't read Falkenrath, and maybe you'll sleep better tonight.

From the wretched to the sublime. O.K., I'm exaggerating. It is nice, though, to find cases in which aiming for perfection in economic policy can be counterproductive. **George Akerlof** of the University of California (Berkeley), along with **Bill Dickens** and **George Perry** of The Brookings Institution, explain why a little inflation is no big deal. Indeed, they argue, America's ongoing success in pushing unemployment below what economists somewhat perversely call the "natural" rate turns on the Federal Reserve's tolerance for rising prices.

"Moderate rates of inflation," they write, "a range that includes the experience of recent years when the core Consumer Price Index has been rising at a 2 percent annual rate,

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allow the economy to operate with low rates of unemployment and are consistent with a policy seeking to maximize prosperity."

You, unlike me as of this writing, know who won the November election – quarterly publications run on astoundingly long lead times. But whoever moves into the White House next January will face the problem of how to deliver on campaign promises to subsidize the costs of prescription drugs for seniors (freshmen, sophomores and juniors will have to wait their turn).

Bob Reischauer, the head of the Urban Institute and a former director of the Congressional Budget Office, along with **Michael Gluck**, a scholar-in-residence at the National Academy of Social Insurance and professor at Georgetown University's Institute for Health Care Research and Policy, offer some solutions. "As of early 2000," they write, "a bipartisan consensus had developed among policymakers and representatives of the organized elderly that something should be done. However, this consensus did not extend beyond 'should.' Many of the disagreements arise from the unfortunate fact that what analysts regard as sensible and administratively feasible is usually seen by policymakers as politically unacceptable."

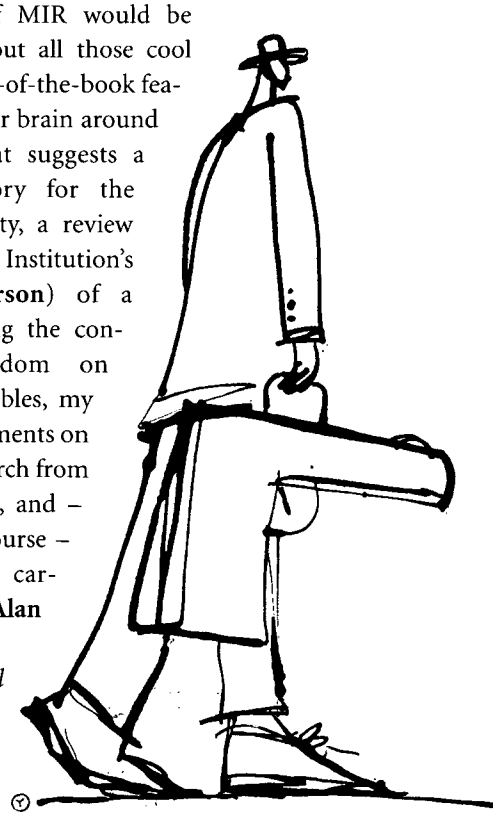
This issue's book excerpt is from *Gun Violence: The Real Costs* (Oxford University Press) by **Phil Cook** of Duke and **Jens Ludwig** of Georgetown. People kill people, we have come to learn. And guns help people with homicidal inclinations to be more efficient at the task. That said, though, it is not clear who bears most of the collective burden of gun deaths.

Cook and Ludwig acknowledge that most victims of gun violence are people we don't know and don't care to know – a reality that undermines middle-class support for efforts to take guns out of the violence equation. But they argue that the indirect costs of gun violence – in large part, the fear of becoming a victim – are far, far greater than the direct costs, and that almost everybody foots part of the bill. "Our estimate that gun violence costs something on the order of $100 billion each year," they dryly report, "turns out to be large enough to support a case for greater attention and effort."

Typically, our "Institute View" is quite brief; much of the work published there is available from the Milken Institute in other, more detailed forms. This time around, though, we are proud to present a longer piece by **Joel Kotkin**, a recent addition to the Institute's line-up of senior fellows. Those who are intrigued by this essay on the renaissance of city centers, will no doubt want to rush out and buy Kotkin's latest book, *The Digital Economy* (Random House).

No issue of MIR would be complete without all those cool front- and back-of-the-book features. Wrap your brain around a charticle that suggests a seductive theory for the cause of poverty, a review (by the Hoover Institution's **David Henderson**) of a book debunking the conventional wisdom on speculative bubbles, my own pithy comments on some new research from hither and yon, and – of course, of course – the Ekinomix cartoon by **Mark Alan Stamaty**.

– *Peter Passell*



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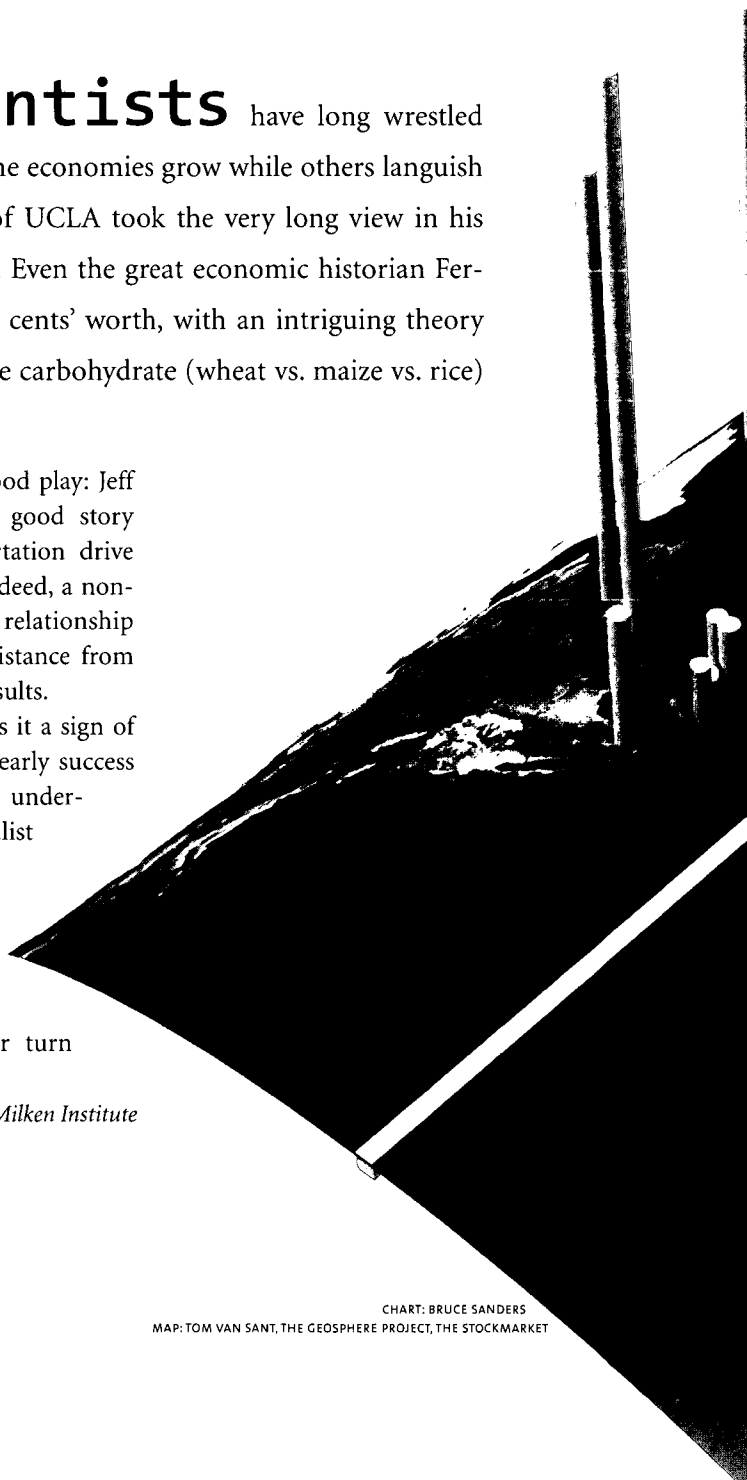
Social scientists have long wrestled with the question of why some economies grow while others languish in poverty. Jared Diamond of UCLA took the very long view in his book, *Guns, Germs and Steel.* Even the great economic historian Fernand Braudel put in his two cents' worth, with an intriguing theory that made the choice of staple carbohydrate (wheat vs. maize vs. rice) the determining variable.

Lately, geography is getting good play: Jeff Sachs of Harvard tells a very good story in which climate and transportation drive development, or lack thereof. Indeed, a non-theory, a simple look at the relationship between living standards and distance from the equator, yields fascinating results.

What does this really mean? Is it a sign of path dependence, in which the early success of agriculture in warm climates undermines the emergence of capitalist institutions? Or an indication of something more sinister, like the plagues of malaria, river blindness, etc. that sap vitality from equatorial economies? It's your turn to guess.

— Thanks to Tom Hall of the Milken Institute



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MAP: TOM VAN SANT, THE GEOSPHERE PROJECT, THE STOCKMARKET

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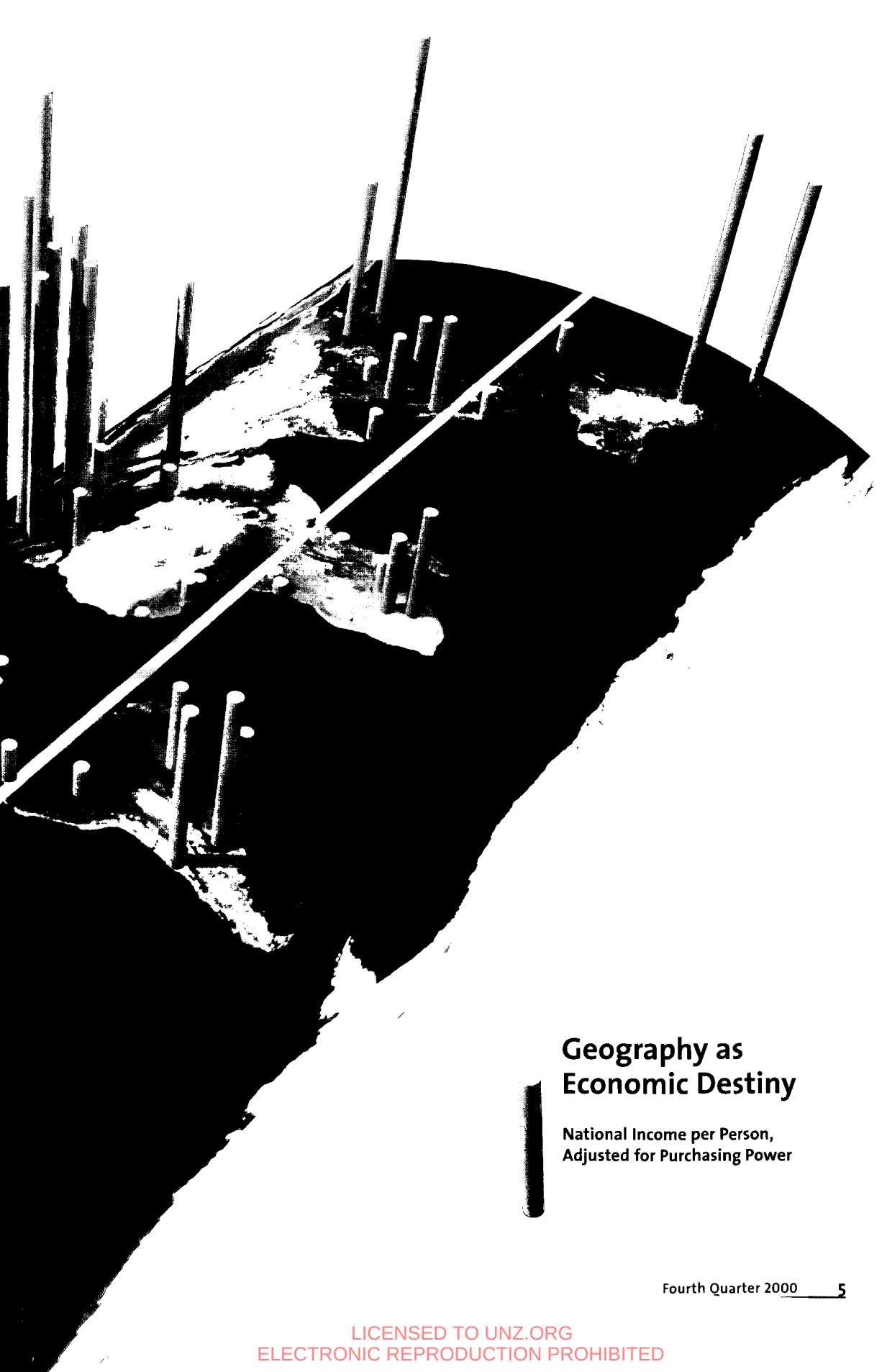

Geography as Economic Destiny

National Income per Person, Adjusted for Purchasing Power

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BY ALBERT FISHLOW

September's meeting in Prague was supposed to be a respite for the movers, shakers and assorted hangers-on at the IMF and the World Bank. After all, none of the big economies seem on the verge of economic meltdown.

Asia continues to recover from the debacle of 1997, despite South Korea's difficulties in restructuring its conglomerates and Indonesia's ongoing political problems. Russia is inching toward economic normality, complaints about Putin's post-Soviet executive style notwithstanding. Brazil has trumped the pessimists with its rapid rate of growth and a second consecutive year of fiscal surplus. And, of course, the United States economy seems to be on a glide path for a soft-as-silk landing, burnishing Alan Greenspan's aura as a superhero of capitalism.

But not everyone came to Prague to celebrate. Some 12,000 protestors made their way to the home of the Velvet Revolution to raise the banner of anti-globalism, a mélange of causes ranging from trade protection to fair labor standards. The protesters' idea is to use high-profile meetings like this one to demonstrate their ongoing hostility to the organizations that preserve the international order. And, in a fashion, it worked: some delegates chose not to brave the street demonstrations to attend sessions, and the meetings were terminated a day early.

Such protests first began in earnest, of course, with the disturbances during the World Trade Organization meeting in Seattle a year ago, and were followed by less-successful manifestations last spring, when the Fund and the Bank held their spring sessions in Washington D.C. On that latter occasion, the protestors got some Establishment support from Stanford's Joseph Stiglitz, the former chief economist of the World Bank, who used the pages of *The New Republic* to condemn the IMF for its mishandling of the Asia crisis.

This time around, though, outsiders' protests were not echoed within the halls of power. Perhaps because of the vast number of non-governmental organizations – environmental groups, labor unions and the like – in attendance, both the Fund and the Bank gave attention to the great gap in the distribution of income: 20 percent of the world's population receives 80 percent of the world's income. But earlier talk of radical reform has dissipated, while reports from a variety of special commissions advocating changes in the rules of the financial game have been met with a collective shrug.

Europe's unhappiness about the United States' opposition to its nominee to succeed Michel Camdessus as the head of the IMF is past history. Meanwhile, James Wolfensohn has been reappointed to another five-year term as president of the World Bank – though the success of his ongoing effort to realign

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the Bank's mission remains in doubt.

With the world economic recovery likely to extend into next year, priorities are subtly changing. Horst Koehler, Camdessus' successor at the IMF, seems amenable to the once-controversial changes suggested by Treasury Secretary Larry Summers almost a year ago. The plan now is to scale back the most expensive forms of Fund assistance. On the other side of the coin, some poor nations will have their debts canceled – but only after presenting plausible plans for dealing with their most pressing internal poverty problems.

There are two central issues on the international agenda now: the quadrupling of oil prices since their nadir in 1998 and the embarrassing plunge of the euro. Both threaten the ability of rich countries to sustain the ongoing global recovery. And both have led to dramatic interventions. President Clinton has opened the oil reserves of the United States in an effort to nudge the price of oil down from its recent peak of $38 a barrel. Meanwhile, the United States and Japan have joined the European Union in buying euros by the billion – the first time in 15 years in which the economic powers have made a concerted effort to realign the values of their currencies.

Why has the focus on institutional change faded? Why are proposals to tear down the IMF and the World Bank and start afresh no longer being treated seriously? The answer is simple: recovery from the shocks of the 1990s, which should include the Mexican decline at the very end of 1994, as well as the debacles in Asia and Russia, has proceeded far faster and more effectively than during the financial crisis of the 1980s. This speedy and relatively smooth recovery underlines the positive side of global capitalism, which the protesters in Prague's streets are inclined to ignore.

It's working. Really.

AP/WIDE WORLD PHOTOS

THE MELTZER REPORT

The International Financial Institution Advisory Commission issued its final report in March of this year. The group, under the chairmanship of Allan Meltzer, an economist at Carnegie Mellon University, was established as part of a deal to obtain Congressional approval for additional funding for the IMF. Coming after a flurry of Asian crisis reports from the Group of Seven, the G-77, the Council on Foreign Relations and the like, it

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was intended to provide a clear direction for future American policy.

But consensus proved illusive: the commission members could unanimously agree on only two propositions: that it made sense to write off the debts of poor countries that are in a position to implement effective economic and social strategies, and that the IMF's lending should be restricted to short-term liquidity needs, as opposed to longer-term assistance. These propositions, of course, correspond exactly to the consensus already developed within the international financial institutions.

On virtually everything else, the commission members divided into two distinct groups that, strikingly, did not track traditional distinctions between right and left on economic issues. What's more, the majority represented a coalition of polar ideological forces. From the right came Meltzer, wishing both to prevent the IMF from validating the claims of profligate commercial banks in the aftermath of the Asian panic and to visualize progress as a matter of less government interference in international capital flows. Meltzer wants the IMF to focus on one thing: short-term lending to help countries cope with temporary imbalances in financial flows. From the left came Stiglitz and Jeffrey Sachs of Harvard, who have aspirations to create a more egalitarian world order through more intervention; their hopes lie with the World Bank.

The center, reflected in the official views of the Treasury Secretary, Larry Summers, and the IMF's second-in-command, Stanley Fischer, (and on the Commission by Fred Bergsten, the head of the Institute for International Economics) is more eclectic. They seek the good rather than the best, and accept – indeed, have championed – proposals for modest change. But they oppose the Meltzer/Sachs/Stiglitz inclination to start with a clean slate.

Let me quote from the report. The majority asserts that "the IMF has given too little attention to improving financial structures in developing countries and too much to expensive rescue operations. Its system of short-term crisis management is too costly, its responses too slow, its advice often incorrect, and its efforts to influence policy and practice too intrusive."

Contrast that with the establishment (and in this case, minority) focus on the mechanics of reform. "Countries will be deterred from getting into crises," we are told, "by charging them penalty interest rates."

THE IMF: A CAPSULE TREATMENT

This yawning gap in outlook between the two camps really comes from very different interpretations of the IMF's efficacy in the last two decades. The IMF is hardly what it was when it was first established after World War II. It was born in an era of massive financial disequilibrium, when the United States played a dominant role as the source of financial aid through the Marshall Plan, and as a magnet for imports from Europe and Japan. Down through the 1970s, the IMF provided temporary assistance primarily to industrialized countries lacking the foreign exchange to sustain stable currencies; this reached a peak in the aftermath of the first oil crisis in 1973. But since the 1980s, the IMF has focused virtually exclusively upon developing and East European countries.

The Fund marched in lockstep with the United States' interests. America's banking system was greatly overextended in its loans to developing countries in general, and to Latin America in particular. The Fed's chairman, Paul Volcker, effectively managed the resulting problem for the American banking sys-

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tem, but at the cost of significant retrenchment in poor countries that lost access to international capital markets. Efforts to remedy the problem, notably Secretary of the Treasury James Baker's plan for modest commercial-lending expansion, died on the vine.

Not until the end of the 1980s, when Mexico and, subsequently, other nations were able to repackage their liabilities, did a solution emerge. About a third of the nominal value of outstanding debt was canceled. Meanwhile, Latin America's economies stagnated and income equality grew. After the fact, few claimed that the IMF had distinguished itself in its limited policy initiatives or guidance to the affected countries.

But in the 1990s, the IMF has played a much different – arguably, a much more important and constructive – role.

For one thing, commercial banks had substantially reduced lending in the aftermath of the crisis of the 1980s. That meant a greater dependence on direct foreign investment for many of the developing countries. It also meant engagement with the IMF as a source of cash when these direct flows were inadequate. For another, Russia emerged as a major borrower in the early 1990s. This cast the Fund as a player in a high-level political drama – the resolution of the cold war. To be sure, the IMF remained a junior partner in the financial initiatives of the major powers. Political pressures were always there and, unfortunately, the Fund capitulated at just the wrong time: the announcement of more than $20 billion in emergency assistance in July 1998 postponed the eventual crisis in Russia by merely a few weeks. But the Fund never lost a penny. And while many banks were caught with nearly worthless Russian paper, the extraordinary rates of interest paid in the runup to default – 80 percent near the end – meant that at least some banks made money.

Third, and most relevant here, the Fund's volume of lending grew to the point where it was a massive presence in the world's financial distress zones. That, of course, was precisely the reason that the Clinton Administration was forced to petition Congress for additional lending authority in 1998.

The growth in the Fund's role was less a matter of planning than happenstance.

The growth in the Fund's role was less a matter of planning than happenstance. First came Mexico at the end of 1994. Its proximity to the United States and its links through the North American Free Trade Agreement virtually guaranteed that Washington would intervene. After Congress refused to pony up the money, the White House turned to the Fund for support. The IMF hastily approved an 18-month credit totaling $17.8 billion, its largest ever. The United States Treasury was able to add $20 billion more from its Exchange Stabilization Fund and the Federal Reserve's swap network, which were outside Congress' direct control. Mexico actually used – and eventually repaid in full – something on the order of $13 billion from each source.

This assistance permitted Mexico to redeem its outstanding bonds indexed to dollars, averting the sort of default that would come later in Russia. Indeed, the effort was so successful that after just one year of decline in national income, recovery was underway. Today, Mexico enjoys a growth rate in excess

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of 6 percent and inflation has declined to less than 10 percent. President-to-be Vicente Fox Quesada, the first Mexican head of state elected from the opposition in seven decades, sees such rapid expansion as a reasonable target for the next years.

While it is never possible to know what lies down roads not traveled, there is good reason to believe that the size of the assistance package and the speed of its delivery were crucial to the recovery. That Mexican taxpayers – rather than, say, Mexican bank depositors or foreign investors – were stuck with most of the bill is exactly what one would expect. To be sure, there can be proper internal dispute about the magnitude of the cost (indeed, the Mexican Congress has debated this point). But it is difficult to argue that this new approach to dealing with crisis was not an enormous improvement on the muddling-through policy of the 1980s.

East Asia in 1997-98 marked the definitive emergence of the new IMF. More than $100 billion was mobilized in assistance to Thailand, Indonesia and South Korea. Virtually every economist has commented on the consequences. The subject, moreover, was the source of Stiglitz's differences with the Fund and the United States Treasury – differences that led ultimately to his resignation from the World Bank.

Asia does not neatly fit into the metaphorical pigeonhole created for Latin America. The countries in crisis had high rates of saving, high ratios of exports to output, and striking past successes in sustaining economic growth. They also had low interest rates, significant public participation in the economy and low inflation rates. But a combination of weak internal banking systems, inadequate financial regulation and overvalued currencies proved sufficient to bring them down. The proximate cause of the crisis was the enormous overhang of short-term debts denominated in foreign currency that far exceeded the countries' immediate capacities to repay.

When the IMF came, it sought to reduce public expenditure, increase taxes, elevate interest rates and cope with insolvent financial institutions. These initial efforts were clearly too broad for immediate execution and erred in asking too much of existing institutions. To its credit, the IMF showed some flexibility over time, revising initial targets and accommodating local realities.

Stiglitz asserts that "all the IMF did was make East Asia's recessions deeper, longer and harder." In fact, South Korea's 6.7 percent decline in gross domestic product in 1998 was more than made up by subsequent growth of 10.7 percent growth in 1999 and a likely growth of 8.8 percent this year. The data are equally positive for Singapore, Hong Kong and the Philippines. The picture is less buoyant for Thailand and Indonesia. But even in those cases, the initial declines should be fully made up by the end of next year. Real devaluations have occurred, with consequent improvements in trade accounts. Moreover, domestic inflation did not surge and thereby cancel gains in competitiveness. And despite initial rises in unemployment, there are ample signs of recovery on that front as well.

The final relevant case is Brazil. It received a $45 billion aid package from the IMF and friends in November 1998, a package designed to smooth economic waters roiled by a real rate of interest of close to 40 percent that had been imposed to prevent capital flight. What was unique about the Brazil loan was its anticipatory quality: it was designed to avert, rather than to correct, a problem. Alas, it did not work that way: capital flight in the form of the failure to renew short-term credits

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forced a minor currency devaluation in January 1999. What's more, as in Mexico and Thailand, the markets were not so easily placated; the government was forced to relinquish control of the exchange rate shortly thereafter.

What is most noteworthy in Brazil is the salutary effect of conservative macroeconomic policy over the last two years. In both 1999 and 2000, the government fiscal balance – federal, state and local, as well as government-controlled corporations – will be significantly positive. Domestic interest rates have come down to a tolerable 10 percent in real terms. Virtually no additional currency depreciation has occurred since the end of last year. Inflation has settled down to a rate of something close to 6 percent. Real growth has recovered to a likely 4 percent this year, after two years of no growth at all. And there's a good chance the pace will accelerate next year.

Perhaps all this proves is that the IMF has finally figured out Latin America. That is, of course, just as well, since the economic fortunes of Argentina, Peru, Colombia and Mexico are still tied closely to Fund policies. But it also suggests that concern about IMF's inflexibility is exaggerated. After all, it has also managed to deal with large political changes in each of the three countries in East Asia receiving major support, while retaining the continuity of corrective policy.

To be sure, the sorts of institutional changes that Asia needs to ensure long-term stability lag badly. But that is hardly surprising. The Korean *chaebol* aren't about to embrace the free market with any enthusiasm. Nonperforming loans at Thailand's banks still represent about 35 percent of bank assets, and can't be made to vanish into thin air. And as the annulment of the government's seizure of Bank Bali implies, Indonesian banking can't be restructured quickly in an unstable political atmosphere.

The key point is that the world economy faced four major challenges in five years: Mexico in 1994, Asia in 1997, Russia in 1998, and Brazil in 1999. None of these crises spread outside their regions, and all of the affected economies are back on growth tracks.

Globalization is a dirty word to many, both here and in the developing countries where the effects are larger and felt more directly. In part, that reaction derives from the dislocations in a world economy in which trade is growing twice as fast as output. In part, it comes from the fact that East Asia alone among developing regions has been able to narrow the income gap with America and Western Europe.

Globalization has been tarred as the ally of the private market – and thus, the enemy of the people. Multinational corporations and financial behemoths are symbols of change in which impersonal competitive markets, rather than governments or belief systems, shape events. Cries for government protection abound for the same reasons hand-loom weavers protested the mechanization of the textile industry in the 18th century.

Worse, perhaps, globalization is seen as made in America, with all the negative baggage that American dominance implies. It is not a purely American enterprise, but the United States has been the developed country that has been quickest to profit from open markets for goods, services and capital. As a consequence, globalization has been seen by others as a race to the bottom rather than a rise to the top.

But to better the environment, to reduce income inequality in developed countries, and to really put an end to poverty in the poor ones, the naysayers are going to have to grow up. Globalization is the only game in town. M

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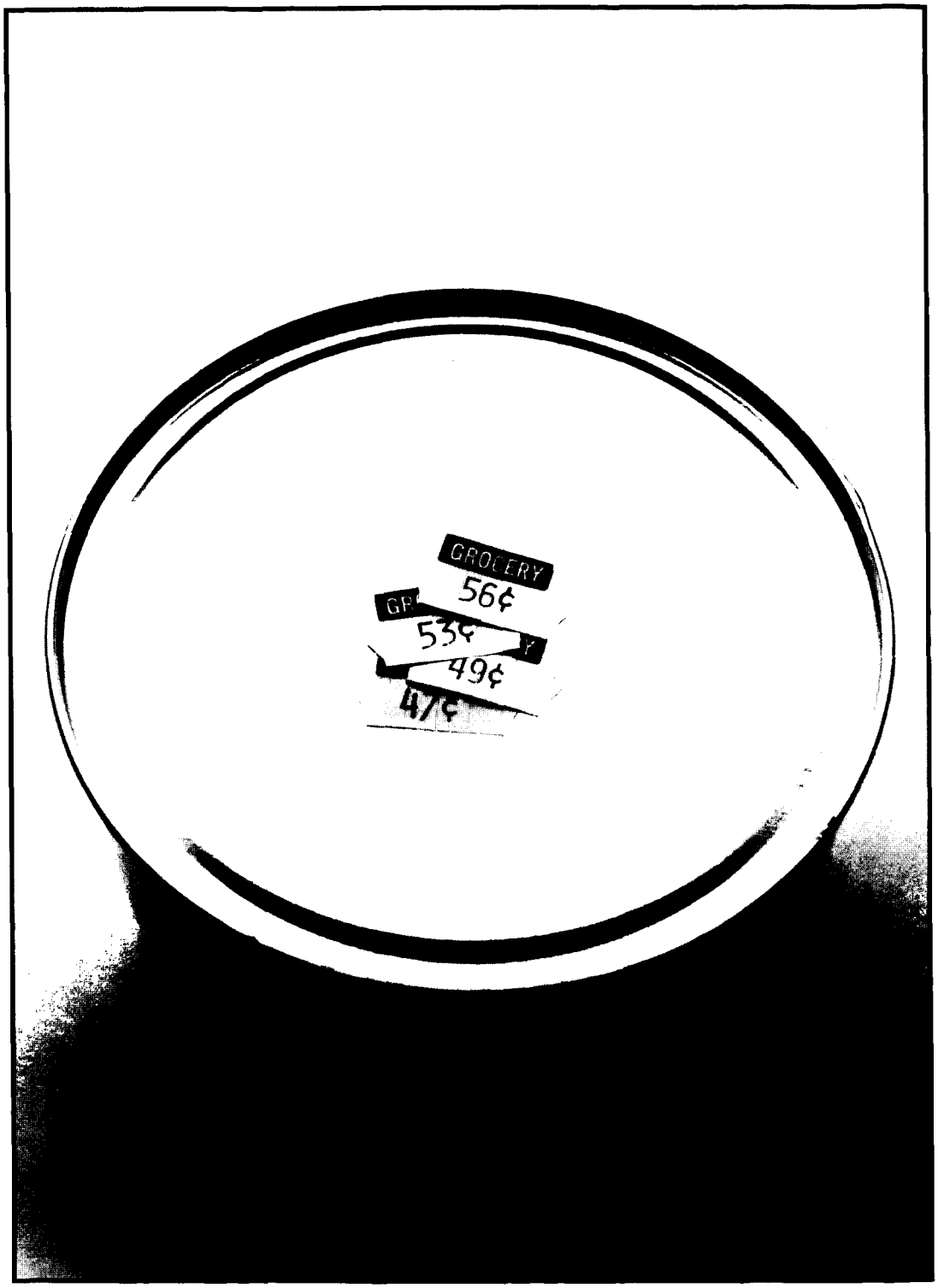

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Why a Little Inflation is Good

by George A. Akerlof, William T. Dickens and George L. Perry

The dismal science rarely confronts an event so undismal as the United States economic expansion in the last half of the 1990s. This economy, with its blend of perky expansion and stable prices, has cast renewed doubt on long-held beliefs about the economy's productive potential – and, more generally, on the relationship between growth and inflation. Is it time to toss out the conventional wisdom built around the notion of a unique "natural" – that is, sustainable – rate of unemployment?

Certainly, it is the moment to reinterpret received wisdom in light of new evidence and a more sophisticated view of the psychological underpinnings of wage-setting behavior. According to our research, there is no unique natural rate of unemployment. What's more, we are convinced that unemployment can be sustained well below conventional natural rate estimates by pursuing moderate – rather than zero – inflation. And that is good news, indeed.

By the mid-1990s, the theory of a natural rate of unemployment – one describing a unique balance between joblessness and the rate of change of prices – had become part of the standard tool kit of policy makers and analysts. Estimates of the "non-accelerating inflation rate of unemployment" (NAIRU), the empirical counterpart of the natural rate, implied that the economy had already maxed out on employment gains. Thus, the prevailing view among mainstream economists was that trouble lay ahead.

Running the Great American Job Machine with unemployment below the NAIRU, it was assumed, would yield accelerating inflation. Yet, over the last half of the decade, joblessness continued to fall (to about 4 percent) even as what economists call core inflation – the underlying inflation trend – remained in check.

The consequences of the Federal Reserve's decision to buck establishment wisdom and not put on the monetary brakes when unemployment appeared to be well below the old NAIRU target have been far-reaching. Comparisons with projections made in December 1995 by the Congressional Budget Office tell the story. Total employment

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grew by 14.2 million between 1995 and mid-2000, far more than would have been compatible with the Congressional Budget Office's assumption of potential economic growth at 6 percent unemployment. When lumped together with faster-than-expected productivity growth (some part of which was probably induced by faster-than-expected economic expansion), this resulted in GDP rising by 12 percent more than had been projected – a whopping trillion dollar serendipity.

Good news begets good news: while the Congressional Budget Office projected in 1996 that the federal budget would be in deficit by $204 billion this year, it now appears that the budget will be in surplus to the tune of $232 billion. Much of this difference comes from positive surprises in income tax revenues that accompanied the strong economic expansion, and from lower transfer payments to the poor.

With hindsight, perhaps we shouldn't have been so surprised by these delightful economic events: the recent period is just one instance in which the NAIRU model has failed. Consider the first half of the 1960s, an earlier period of low inflation and rapid growth. By 1963, a conscientious application of the NAIRU idea, which had not yet surfaced, would have suggested that the economy was on the threshold of accelerating inflation. Yet most economists at the time argued that resources were underutilized – that the economy was actually in need of fiscal or monetary stimulus. And they were right: unemployment declined steadily with almost no speedup of inflation until 1966, when demand induced by the Vietnam military buildup overheated the economy.

More generally, the natural-rate models have never worked in periods of low inflation and high unemployment. According to the theory, such circumstances should lead to accelerating *deflation* – a condition never observed in the United States in modern times. Nor, for that matter, have the natural-rate models performed particularly well in periods of high inflation.

Failure to predict events in some periods can be excused. The early 1970s, for example, were affected by price controls and the explosion of world oil prices, which required adjustments to any macroeconomic model based on past history. In Europe, the model could only be made to resemble developments of the past two decades by using a variety of ad hoc devices – fixes that effectively empty the model of content.

We have developed an alternative to the natural-rate model based on behavioral assumptions that we find more realistic, and that fit the facts better. The key assumption that we changed concerns the critical role of expectations in creating and reinforcing the inflation process. Economists generally link changes in inflation to three things: aggregate demand conditions, as measured by the unemployment rate or other indicators of resource utilization; supply shocks like the OPEC-induced oil shortages of the 1970s; and changes in expectations of inflation.

Natural-rate models assume that a change in expected inflation sooner or later raises actual inflation by the same amount. NAIRU models then fill in the blanks by estimating the time lag between the changes in expectations and what actually happened to the rate of inflation. By contrast, we view how people use expectations, rather than how they form

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them, as the key to modeling the dynamics of inflation. Rather than accepting the standard economic assumption that people always make the best use of all available information, we turn to evidence about how people actually use information in making decisions.

This leads us to a macroeconomic model in which the impact of expected inflation varies with the inflation rate – and that makes a big difference. In natural-rate models, there is a unique sustainable rate of unemployment. Attempts to push the actual rate below the natural rate inevitably end in tears. Our model, by contrast, implies that there is a range of unemployment rates that are consistent with low and steady rates of inflation.

This difference is crucial. Econometric estimates based on the old approach systematically underestimate the economy's potential, especially during periods of low inflation. Furthermore, pursuing zero inflation (as adherents of natural-rate models often advocate) leaves unemployment wastefully high and keeps the economy well below its productive potential. The lowest sustainable unemployment rate in our model, which is achieved with moderate rates of inflation, is far below the rate associated with maintaining zero inflation.

Before examining our new model and the empirical estimates we derive from it, take a brief look at the evidence that casts doubt on the NAIRU formulation. Then, more fundamentally, take a closer look at the evidence that calls into question the behavioral underpinnings of natural-rate theory.

THE GENESIS OF EXPECTATIONS

NAIRU models generally assume that people's expectations of future inflation are formed by a forward projection of recent history. But this assumption about how expectations are formed is not consistent with the data. Most recently, William Brainard of Yale and George Perry estimated a relationship between resource-utilization rates and inflation pressures with a technique that permits all the coefficients of the model to vary over time. They found the way that past inflation affected expectations of future inflation varied with economic circumstances, undercutting the standard assumption built into the old models. Past inflation apparently had a relatively modest impact on expectations before the 1970s, then rose considerably as an influence with the onset of the two OPEC oil shocks, and then declined again as inflation fell to its recent tame level.

As a preliminary step, we estimated separate Phillips curves – the relationship between employment rates and wage or price inflation – for periods of low and high inflation. To do this, we sorted the data from 1954 through 1999 into two samples: quarters in which the five-year average of inflation was below 3 percent, and those in which it was above 4 percent. (The consumer price index in the two samples averaged 2.0 percent and 6.3 percent, respectively.)

We then applied statistical-regression

Our model implies that there is a range of unemployment rates that are consistent with low and steady rates of inflation.

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techniques to estimate the Phillips curve relationships implied by the two data series. We found that people reacted more strongly to past inflation in high-inflation periods than in low-inflation periods.

HOW PEOPLE USE EXPECTATIONS

Think for a minute about the way expectations are incorporated into formal economic models of inflation and unemployment. NAIRU models assume expected inflation is always fully incorporated into the decisions of firms and workers. However, a wealth of evidence suggests this is a bad assumption. People take account of what is important to them at the time. Indeed, psychological studies suggest that decision makers "edit" the information available, ignoring much that is potentially relevant in order to concentrate on the few factors that seem to matter most. Similarly, studies on perception show that a stimulus must pass a threshold before it is even recognized as relevant, let alone used.

We also used information from interviews with job-compensation professionals that suggested firms do not behave as most economic models assume they do. Rather than choosing a real wage or price target and then adjusting their nominal wage or price to account fully for expected inflation, they mix information about inflation with a variety of other sorts of information relevant to price or wage-setting. By the same token, surveys by Robert Shiller (Yale) and questionnaire studies by Eldar Shafir (Princeton), Peter Diamond (MIT), and the late Amos Tversky offer telling evidence that workers systematically underestimate the tendency of inflation to boost their own nominal wages. Therefore, in periods of moderate inflation, employees view the wage increases they do get very favorably, and job satisfaction is likely to be high if their wages simply keep pace with inflation.

A NEW AND IMPROVED MACRO MODEL

We can now sketch out how we incorporate expectations into our formal model relating inflation and unemployment. Firms set wages, and workers then respond according to their view of job and wage opportunities elsewhere. The crucial issue is how wage-setting behavior varies with the inflation rate. Even when inflation is low, some firms' wage-setting fully incorporates expected inflation, while others do not. These latter firms respond fully to current supply and demand conditions in their labor market when setting wages, but less than fully (or not at all) to expected inflation. Because all firms adjust to current market conditions each time they set wages, the wage level in firms that do not take full account of inflation trails the average wage – but only by a small (and not cumulative) percentage.

We also assume that product prices for all firms are a markup of expected labor costs per unit of output. One can show that the cost in lost profits from less-than-complete attention to low rates of inflation is negligible, but that the cost of such inattention grows along with the inflation rate. This supports our key hypothesis that the proportion of firms that fully adjust for expected inflation when they set wages will rise along with the inflation rate. With little or no inflation, a large fraction of firms will not fully adjust their wages and prices. At successively higher rates of inflation, the fraction declines, and at a sufficiently high rate of inflation all firms fully incorporate expected inflation.

This behavior by firms has important implications, which are illustrated in the diagram. At zero inflation it does not matter whether firms pay attention to inflation, and

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equilibrium unemployment corresponds to what would be the natural rate in old models. In a 1996 study we focused on the importance of downward rigidity of nominal wages and concluded that at zero inflation, unemployment would actually be above the natural rate because some inflation is necessary to allow adjustment of relative wages. But we ignore that effect here in order to simplify the exposition of our new theory dealing with expectations.

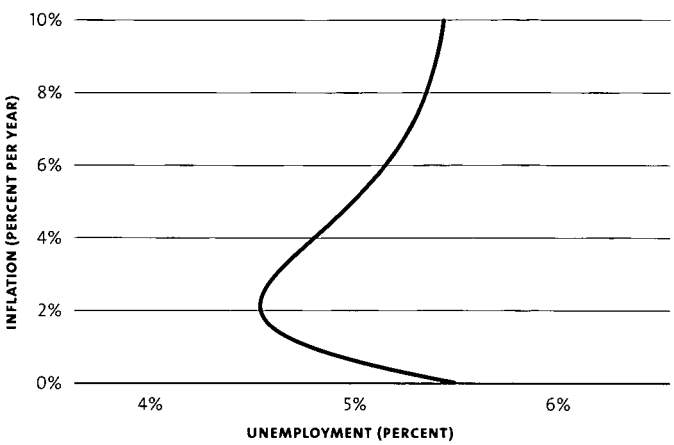
In the range of very low rates of steady inflation, moving to slightly higher inflation generates a sustainable reduction in unemployment. This long-run trade-off reflects two effects working in opposite directions.

- At higher rates of inflation, the wages and prices of firms that do not take full account of inflation fall somewhat behind the wages of firms that are more vigilant. These firms sell more and employ more workers than they would if they set their prices higher. Their lower prices also leave consumers with more to spend, so demand for the products of other firms increases as well.
- As inflation rises, more firms fully incorporate expectations into their decisions. As a consequence, some of the macroeconomic benefits from the first effect are lost.

In the range from zero to moderate inflation, the first effect dominates. Beyond some moderate inflation rate, the second effect dominates and higher inflation is associated with higher unemployment, eventually approaching the conventional natural rate as all firms and workers fully incorporate inflationary expectations.

The left-most point in the diagram is the point of lowest sustainable unemployment. It is an equilibrium associated with a moderate – not zero – rate of inflation. By contrast, the unique equilibrium predicted by conventional natural rate models is significantly above this lowest sustainable unemployment rate.

THE PHILLIPS CURVE, REVISED



While the curve in the diagram is only illustrative, the empirical estimates discussed below support its shape and suggest the spread between the lowest sustainable unemployment rate and the natural rate is probably a few percentage points.

TESTING THE GOOD-NEWS MODEL

We use data on the United States economy in the postwar period to add some empirical flesh to these theoretical bones. The key test of the model is whether the data really do imply that the labor market's sensitivity to inflationary expectations varies in the way predicted by our theory. To provide a check on the statistical robustness of the results, we use a variety of alternative proxies for the sensitivity variable.

We also offer a variety of variables as prox-

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ies for expected inflation, which cannot be measured directly because economists are not mind readers. Finally, while all the data needed to test the model are available from the first quarter of 1954 through the fourth quarter of 1999, in some cases we restricted the data used to estimate the model to the period ending in the fourth quarter of 1989. The idea was to ensure that the results were not driven by the one long episode of low inflation and falling unemployment in the 1990s.

The most important result is that nearly all the estimates indicate that large, sustainable gains in employment are available by operating the economy at inflation rates moderately above zero. To summarize this range of estimates, we calculate the inflation rate associated with maximum employment and the difference between the corresponding unemployment rate and the conventional natural unemployment rate, which measures the employment gains available. Not surprisingly, the large number of plausible alternative specifications of the underlying model generates a wide range of estimates. The densest cluster of estimates for the inflation rate that maximizes employment in the long run spans a range from 1.5 to 3 percent. That corresponds to a range of 0.5 to 3 percentage points for the unemployment reduction that goes with operating at moderate rather than at zero inflation. Putting it another way, allowing moderate inflation – as opposed to tolerating high inflation or demanding zero inflation – could reduce unemployment by four million!

The results just described come from 218 plausible alternative specifications of the model. We examined four of these specifications more fully, using different variables to measure inflation. In each case the coefficient that measures the sensitivity of wage-setting to inflationary expectations stays high between the onset of the inflationary period that began in the late 1960s and its end in the early 1980s.

The rate of inflation that maximizes employment ranges between 1.6 and 3.2 percent. And the reduction in unemployment available from operating at these inflation rates (rather than at zero or high rates of inflation) ranges from 1.5 to 3.1 percentage points.

Although these estimates surely support our good-news hypothesis, they cannot be used to set precise targets for inflation and unemployment. Indeed, it would be unrealistic to seek such estimates. However, our main results and the departures from conventional natural-rate models appear robust, and should provide useful guidance to policy makers.

THE BOTTOM LINE

Rather than facing a unique natural rate of unemployment created by demography, labor market institutions and other variables beyond the control of macroeconomic policy, the economy faces a range of sustainable unemployment rates that are consistent with moderate rates of inflation. For econometricians, the main message is that models assuming a unique natural rate of unemployment yield misleading estimates of the economy's potential and the minimum rate of unemployment that is sustainable.

For policy makers, the bottom line is easily stated. Zero inflation is an inappropriate target because it substantially raises the minimum sustainable rate of unemployment. High inflation also leads to higher unemployment. Moderate rates of inflation, a range that includes the experience of recent years, allow the economy to operate with low rates of unemployment and are consistent with a policy seeking to maximize prosperity. M

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Good Policy vs. a Medicare Good Prescription Politics

Drug Benefit

push down & turn

open-close

By Robert D. Reischauer and Michael E. Gluck

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It was no surprise that prescription drug coverage for Medicare became a major issue in the presidential election campaign. The lack of outpatient coverage is a glaring gap in the basic Medicare benefit package – one that made sense in the mid-1960s when the program was created, but not today. At that time, the employer-sponsored policies on which Medicare was modeled did not routinely cover prescription drugs; it would have been untenable to provide the elderly with protection that the taxpayers supporting the new program did not enjoy. Furthermore, in an era before ubiquitous computer networks, the government would have had a terrible time keeping track of spending by millions of beneficiaries at thousands of pharmacies.

Today, some 95 percent of employer-sponsored health insurance plans include some drug coverage. And all 51 state Medicaid programs for the poor cover prescriptions, even though federal law does not mandate drug benefits. Medicare has become the outlier.

The spread of pharmaceutical coverage reflects the reality that drug therapies are critical complements to (and substitutes for) other treatment – and that failure to take medications early can increase the need for far more expensive hospital services. Meanwhile, administrative barriers have been swept aside by cheap microprocessors and cheaper long-distance telephone service; a pharmacy in Arizona can now quickly determine the appropriate copayment and deductible to apply to a prescription for a vacationing worker from Boston.

Washington has responded periodically with efforts to add prescription drugs to Medicare. And success seemed at hand in 1988 when Congress approved the Medicare Catastrophic Care Act, which included a drug provision. But before the act could even be implemented, Congress repealed the law in reaction to the organized outrage generated by the accompanying income tax surcharge on beneficiaries.

The failure of Medicare to cover outpatient prescription drugs has been tolerated because a majority of the elderly (including those with the most political clout) have been able to obtain coverage through other insurance. Some 69 percent of Medicare participants had drug coverage for at least one month during 1996, with roughly one-third obtaining coverage through employer-sponsored retiree policies and about one-tenth each from so-called Medigap policies, Medicare+Choice HMO plans and government Medicaid.

But both access to supplemental plans and the generosity of their drug benefits have begun to erode. The proportion of employers offering these policies to Medicare-eligible retirees decreased from 40 percent of companies in 1994 to 30 percent in 1998. And this decline occurred in a period of restrained growth in employer health care costs. If these costs begin to rise more rapidly – as appears to be happening – employers will be under yet greater pressure to cut retiree benefits.

By the same token, HMOs have been squeezed by the slower growth of government payments for Medicare clients, and have responded by trimming their drug benefits or dropping them altogether. The percentage of plans that have capped drug benefits at $1,000 or less – a drop in the bucket for those with chronic diseases – increased from 35 percent in 1998 to 59 percent in 2000.

About 11 percent of Medicare beneficia-

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KEN BURRIS (ALL)

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ries obtain drug coverage through individually purchased Medigap policies. But this coverage, too, is limited and its costs are beginning to rise rapidly. If the trend continues, growing numbers of seniors will simply be priced out of that market.

Yet even as access to drug coverage has shrunk, seniors' need for such protection has grown. Not only are expensive pharmaceuticals being developed to treat acute conditions, drugs are now more frequently prescribed to manage chronic health problems – everything from hypertension to estrogen deficiencies. People lacking drug coverage are particularly disadvantaged; as individuals, they pay top-dollar at pharmacies because they have no bargaining power.

It is thus not surprising that there has been growing political interest in Medicare prescription coverage. This interest intensified in 1999 when the Bipartisan Commission on the Future of Medicare and the White House both proposed Medicare initiatives that included subsidized drug coverage.

Indeed, a bipartisan consensus had developed among policy makers and representatives of the organized elderly that something should be done. However, as so often is the case with health policy, this consensus did not extend beyond "should." Many of the disagreements arise from the unfortunate fact that what analysts regard as sensible and administratively feasible is usually seen by politicians as unacceptable.

INTEGRATED OR SEPARATE?

From an analytic perspective, there is no question that a drug benefit should be a component of Medicare. If the initial decisions about the scope of the basic Medicare benefit package were being made today, outpatient prescription drugs would clearly be included. After all, it makes no more sense to leave drugs uncovered than it would to exclude lab tests. Imagine what it would be like today if Medicare participants could choose among a dozen arrangements for covering lab work.

Employers have long recognized the need to integrate drug coverage into their insurance. They do not offer employees the choice of forgoing prescription coverage; nor do they give their employees a menu of drug coverage options. If they did, the young and the healthy wouldn't be willing to pay, undermining the whole point of group insurance.

By the same token, it is only logical that cost-sharing requirements associated with drug coverage be coordinated with the cost sharing for other treatments. Ideally, cost sharing would be designed to encourage providers and patients to choose the mix of treatments that is most cost-effective. It makes no economic or medical sense, for example, to drive patients into surgery because it's covered, when drug therapy is cheaper and more effective. To date, there has been no systematic effort to shape Medicare's cost sharing requirements in this way. But adding an integrated drug benefit would certainly make the job easier.

The integrated approach, however, has little political appeal, as the denouement of the fully integrated drug benefit in the Catastrophic Coverage Act illustrated. Under that ill-fated law, all participants in the Medicare "Part B" supplemental insurance program would have been covered. Medicare would have paid 80 percent of drug costs in excess of a deductible, and there would have been no limit on benefits. In other words, the benefit's structure followed the pattern for most other services covered by Medicare Part B.

The integrated approach's lack of political appeal is explained by two unattractive trade-offs. First, because all Medicare beneficiaries

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must be covered, integrated approaches either cost a lot or require sharp restrictions on benefits. And if the program is costly, big taxpayer subsidies are necessary or participants must be charged high premiums – neither of which is an attractive option.

To hold costs down, the architects of the now-defunct catastrophic insurance plan restricted the number of participants receiving benefits in any year by establishing a very high deductible. Indeed, by law, the deductible was set so that only the one-sixth of participants with the highest drug expenditures each year would qualify for benefits. This undercut the program's political appeal because most seniors realized they would not benefit from the program. Imagine how popular a drug benefit would be today if it had a $1,700 deductible – the level needed today to limit benefits to one-sixth of Medicare participants.

The second unappealing trade-off arises because substantial numbers of Medicare beneficiaries also are covered by employer-provided retiree policies. If Washington foots the prescription drug bill now paid as part of a retirement package, business gets a windfall. On the other hand, those already enjoying employer-funded coverage would scream if the Medicare reform included a charge for drugs they already get at no cost.

The Catastrophic Coverage Act took the latter route: all beneficiaries were required to pay higher premiums and, for high income earners, an income tax surcharge as well. President Clinton's proposal, by contrast, adopts the former (politically palatable) approach: it would subsidize employers that currently provide coverage at least as generous as the new Medicare drug benefit.

In addition to the resistance created by these difficult choices, some powerful political interests are arrayed against an integrated drug benefit. Foremost among them is the pharmaceutical industry, which believes (probably correctly) that the more closely a drug benefit is integrated into the traditional Medicare program, the greater the likelihood of government price and usage controls.

In addition, companies that now sell private Medigap policies, and those offering Medicare+Choice HMO plans, are not enthusiastic about an integrated drug benefit. Medigap insurers see a loss of business, as fewer beneficiaries feel the need to buy supplemental policies if drug coverage is included in the basic Medicare package. HMOs, which have used drug coverage to attract beneficiaries from traditional fee-for-service care, would lose a major marketing tool if Medicare offered an integrated drug benefit.

Political considerations have thus convinced most policy makers that a fully integrated Medicare drug benefit is not viable. The Clinton plan (S. 106-2342), the legislation that passed the House of Representatives in 2000 (H.R. 106-4580), the Breaux/Frist proposal (S. 106-2807), the Kennedy/Stark bill (S. 106-841/H.R.106-1495), the Snowe/Pallone Seniors Prescription Insurance Coverage Equity (Spice) initiative (S.1480/H.R. 2782), the Graham/Bryan/Robb bill (S. 106-2758), and the catastrophic component of the Bilirakis/Peterson plan (H.R. 2925) are all structured as supplements or add-ons to Medicare. They would make drug coverage universally available, but add complexity to Medicare because the benefit would be provided through many channels.

Complexity would also increase if the drug benefit were permitted to vary from plan to plan, as would be the case under several of these proposals. Moreover, in all of these add-on proposals except the Bilirakis/Peterson plan, government subsidies for low-income participants would be different from those for

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the basic Medicare program – and that would require another mechanism for determining eligibility. By the same token, several proposals would create a new governance structure to administer the drug benefit.

While neither neat nor efficient, drug coverage structured as a Medicare supplement would still represent a step in the right direction. Moreover, one can imagine that these add-ons could be fully integrated into a reformed Medicare system later on.

The same cannot be said for stand-alone approaches – subsidizing state programs or reducing costs through tax breaks. Allowing state variation would ensure that drug coverage for the elderly, like welfare for the poor, would vary inequitably from state to state. Programs restricted to low-income seniors represent a departure from the principles of social insurance, which call for universal eligibility. Tax deductions or tax credits would be of no use to the majority of elderly, who do not have to file income tax returns.

INSURANCE OR ASSISTANCE?

For years, employers and the government have been grappling with the question of whether health coverage should take the form of "insurance" or "assistance." True insurance protects against large, unexpected, financially debilitating expenditures over which the insured has little control. Expenditures that can be foreseen (and therefore budgeted for), unexpected expenditures that are of a manageable size, and discretionary health spending (e.g., cosmetic surgery) are not covered by pure insurance. Large deductibles, low coinsurance rates and "stop-losses" (out-of-pocket limits above which insurance picks up all the costs) characterize pure insurance. As is the case with auto and homeowners insurance, a small fraction of those covered by health insurance would receive benefits.

Assistance, by contrast, spreads benefits widely, providing partial coverage for routine expenditures and deeper coverage for large, unexpected expenditures. Deductibles are low or nonexistent. Health coverage that comes in the form of assistance can be very expensive unless limits are placed on utilization or total exposure. Health assistance plans typically use gatekeepers, maximum benefit limits and high rates of coinsurance for out-of-network care to limit costs.

Coverage in the United States has gradually moved away from the insurance model toward the assistance model for a number of reasons. The first is the growing belief that preventive care – routine budgetable care – is important to maintaining healthy workers. If participants generally do not buy preventive care when they are required to pay its full price, employers may reason that their interests are best served by coverage that follows the assistance approach.

Second, the assistance model may be the best way to structure health coverage that is politically sustainable.

Under pure insurance, all workers pay through reduced wages, while only a minority receive benefits. This arrangement might have been acceptable when companies had work forces that were stable and workers who did not benefit in the near term believed their time would come. But now that job tenure is less stable, many workers believe they will never receive a benefit from their current employer's plan if it is structured as true insurance. By contrast, health assistance ensures that the majority, even those who are young and healthy or expect to stay at the company only briefly, will realize some benefit.

Third, as the real wages of the low-skilled have declined and the costs of medical care have soared, it has become increasingly

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apparent that insurance with a one-size deductible does not fit all. For the mail room clerk, $500 in health care outlays could be financially debilitating; for the software engineer, the figure might be $5,000.

Besides, because employer-sponsored health coverage is extended to families as well as individual workers, the problem is more complex than relating the deductible to each worker's earnings. Family resources, not the individual worker's earnings, should be used to make this determination. But with growing numbers of two-earner couples, employers are not in a position to set equitable income-related deductibles. Health assistance is one way to avoid this conundrum.

Notwithstanding these trends, a strong case can be made for insurance rather than assistance for a Medicare prescription drug benefit. Costs could be held down, administrative complexity kept to a minimum, and benefits targeted to those whose needs were large through an insurance policy with income-related deductibles. For example, the base deductible could be set at $500 for those with no income tax liability (most individuals and couples with incomes below $25,000 and $32,000 respectively). Those who had some income tax liability might face a higher, graduated deductible – for example, $500 plus 2 percent of taxable income.

This insurance program would pay a fixed fraction – say, 70 percent – of drug expenditures in excess of the $500 deductible. While those with a higher deductible would be "overpaid" during the year, the government could recapture the overpayments through a reporting mechanism linked to the income tax. Note that since taxable income includes realized capital gains, taxable pensions, rental income, dividends, interest and – for those with higher incomes – a portion of Social Security, it represents a broad measure of ability to budget for health expenditures.

While such considerations suggest that an equitable, efficient and affordable Medicare drug benefit could be designed using the insurance model, there would be little enthusiasm for such an approach. Drug coverage provided through pure insurance was not popular when catastrophic coverage was enacted in 1988, and it would be even less popular now because the ways in which most Americans receive their drug coverage have changed drastically.

Today, most insured workers and their dependents get drug benefits through assistance schemes, and they seem satisfied with this structure. Employer-sponsored plans usually have no deductible, or only a small one. Increasingly, flat dollar copayments rather than coinsurance (a percentage of the costs) are required.

Any Medicare drug benefit that is politically viable will probably have to follow the prevailing pattern for coverage in the under-65 population. In other words, it will have to follow the assistance model and ensure that a significant majority of the 87 percent of Medicare beneficiaries who fill at least one prescription a year receive some benefit.

CONSTRAINING COSTS

Lawmakers have been concerned about both the initial costs of a Medicare drug benefit and the possibility that the new benefit's costs could grow explosively. Already, Medicare is the third largest federal program (after Social Security and defense), and there is an understandable reluctance to expand the program's budget. Any expansion would entail larger transfers from general revenues, increases in premiums, or higher payroll taxes.

Political reality dictates that a substantial portion of the money used to pay for a new

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drug benefit would come from general revenues – that is, from the surpluses in the non-Social Security portion of the budget. But there are other powerful interests clamoring for these resources – notably defense, education and taxpayers who want some of their money back.

The initial costs of prescription drug coverage might be contained in a variety of ways:

- confining coverage to drugs used to treat a limited number of diseases
- restricting access to a single, relatively cheap drug in each category
- imposing high coinsurance/copayments and large deductibles
- capping annual benefits
- charging large premiums
- limiting eligibility to low-income seniors
- controlling prices

While private sector plans have found some of these tools effective, few would prove politically viable in the Medicare context. Any attempt to restrict a Medicare drug program to pharmaceuticals used to treat just a handful of diseases would be viewed as unfair by heavy users of other drugs. This would be the case even if the benefit were paid entirely from general revenues.

If premiums were imposed to cover some of the costs, participants with large uncovered expenditures would be enraged. If participation required premiums and was voluntary, few would enroll except those who needed the covered drugs. Political pressure would build to expand the list of covered diseases.

By the same token, restrictions that steer beneficiaries to generic drugs and selected medications that pharmaceutical companies agree to sell at deep discount would probably not be sustainable. Knowledge about the relative efficacy of different drugs within each therapeutic class is extremely limited. In addition, a Medicare beneficiary is more likely than most patients to be taking multiple pharmaceuticals, increasing the potential for side effects – which argues for giving physicians considerable flexibility in choosing drugs. It is thus hard to imagine that Medicare participants would tolerate a drug benefit that covered only generic medications or a single branded drug per therapeutic class. Physicians and pharmaceutical companies would also fight this battle with gusto.

A large deductible would reduce the number of participants who benefited from the coverage. If participants were not required to pay premiums – in other words, if the benefit were financed entirely from general revenues – a large deductible might be accepted. If, on the other hand, participants were required to pay premiums, the deductible would probably have to be set low enough to ensure that a substantial portion of the participants received some benefit.

High coinsurance rates seem to be more acceptable among the Medicare population – Medigap coverage, President Clinton's proposal, and the other legislative proposals all require 50 percent coinsurance. But the combination of high coinsurance rates and large deductibles is probably a politically lethal mix. President Clinton's plan has no deductible at all, and the modest $250 deductible in Medigap policies ensures that more than 60 percent of policyholders receive some level of benefit.

Experience suggests that benefit caps would be a politically acceptable way to hold down the initial costs of a Medicare prescription drug benefit. The government-standardized H and I Medigap policies cap drug benefits at $1,250 a year, while the J policy has a $3,000 annual limit. Most HMOs also impose caps on drug benefits. Not surprisingly, then, President Clinton's proposal would limit benefits to $2,500 (when fully implemented

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in 2008). The Breaux-Frist and House legislation would limit benefits to $1,050 in 2003.

Caps are a politically viable way of constraining costs because they affect few people significantly. For example, the Congressional Budget Office estimated that in 2009 the $2,500 cap in President Clinton's plan would affect just one-fifth of participants, and many of those affected would have only a modest amount of spending over the cap. But caps are undesirable because they defeat the objective of insurance, which is to protect individuals from unpredictable, catastrophic expense. Moreover, there is no analytic rationale for imposing constraints on one component of health care spending but not others.

As a matter of public policy, a strong case can be made for imposing premiums that cover a high fraction of the benefit's cost. After all, beneficiaries or their former employers are picking up much of the costs of drugs today, and if they are not charged premiums of a commensurate magnitude, they will reap windfalls.

Moreover, transforming out-of-pocket payments by individuals and employer subsidies of premiums need not lead to a dramatic shift in average burdens. Employers should be willing to continue subsidizing their retirees' premiums in return for some federal sharing of the drug costs in their retirees' plans. Rational individuals without drug coverage should welcome the protection that drug coverage provides and the reduced out-of-pocket spending. Those paying steep premiums for limited Medigap drug protection should, at worst, be indifferent. Only those in no-premium HMO plans with drug coverage would have reason to complain.

Public policy, however, cannot be made by reference to averages. Both employers whose retirees use relatively few drugs and healthy seniors would balk at paying significant premiums. If the benefit were not mandatory, many would opt out. Such considerations persuaded the Clinton administration to limit the portion of program costs paid through premiums to 50 percent.

The initial costs could be limited by restricting eligibility to low-income individuals. The Bilirakis/Peterson proposal provides grants to states that assist low-income Medicare participants with their drug costs. The proposals crafted by Representative Kennedy of Rhode Island (H.R. 106-723) and provisions of the reform proposals put forth by the Health Insurance Association of America also focus assistance on low-income beneficiaries. Presumably, such designs ensure that assistance is delivered to those with limited ability to budget their drug costs – in particular, persons who would become public charges if their failure to use medications led to hospitalization.

While a targeted program may be equitable and efficient, such an approach is not likely to prove popular. Pressure for a drug benefit is not coming from selfless concerns for the poor, but a growing sense of exposure among the middle class. A substantial fraction of those lacking drug coverage are not poor – one-fifth have incomes more that three times the poverty threshold. Looked at another way, 28 percent of Medicare beneficiaries with incomes over $30,000 lacked drug coverage in 1995.

Administered prices – that is, price controls – could reduce the initial cost of a Medicare drug benefit. Indeed, because providers and suppliers of most Medicare services are paid through one or another system of administered prices, the natural question is, "Why not drugs, too?"

Medicare could, paradoxically, let its administered prices be set by the private market.

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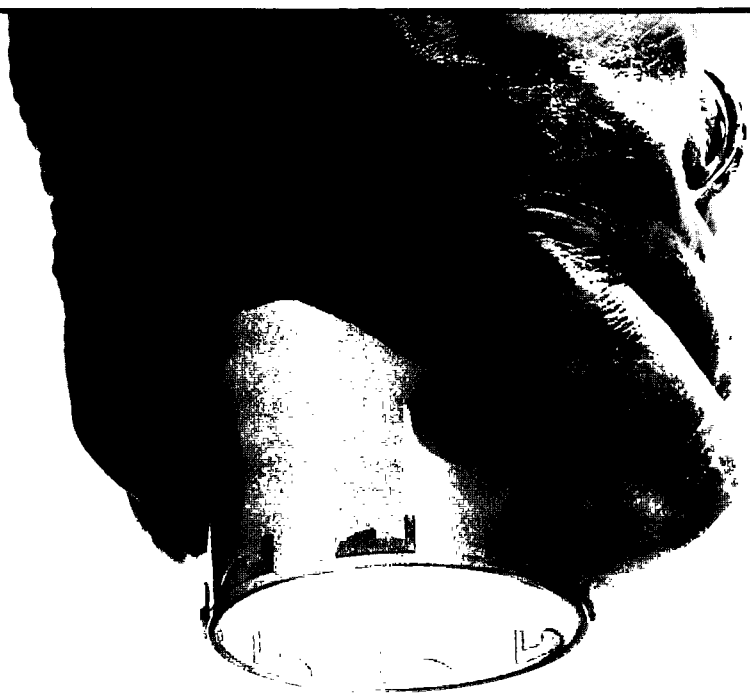

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Large purchasers – the Department of Veterans Affairs and large self-insured plans – currently obtain discounts and rebates that amount to somewhere between 10 and 20 percent. Pharmaceutical manufacturers could be required to sell drugs to the entities administering a Medicare drug benefit at the lowest price they sell to other large purchasers. Such an arrangement would be similar to the rebate system for Medicaid that was established in 1990.

However, even this market-driven system could be administratively complicated and, in the eyes of the drug companies, unfair. It could quickly lead to disclosure of their marketing arrangements and cause a convergence in the prices they charge different purchasers. While this might improve the equity of the overall system, it would probably push up private sector insurance costs and eliminate the efficiency gains linked to what economists call price discrimination.

Moreover, drug companies would argue that the discounts they provide other large purchasers are different because these buyers steer demand to their products through restrictive formularies and variable copayments. But it is unlikely that the political system would allow the entities managing a Medicare drug benefit to use such tools. Rightly or wrongly, the ethos of Medicare has been that any willing provider should be able to offer any service in any setting.

Limiting the initial cost of a Medicare drug benefit would probably be easier than controlling future cost growth. In recent years, drug expenditures have risen more rapidly than the other major components of health care spending, and this pattern is projected to continue. Indeed, between 1999 and 2008, the government expects personal health expenditures to grow at an annual rate of 6.7 percent while drug outlays rise at a 10.3 percent pace. It is likely that this difference in spending growth will be even more pronounced for seniors. In short, once in place, the costs of any Medicare prescription drug benefit are likely to grow significantly.

This prospect, together with projections showing that even without an expanded benefit package Medicare spending relative to GDP will double in the next 35 years, has convinced policy makers they must constrain the growth of outlays for any new drug benefit.

To this end, some proposals would structure the drug benefit as a capped entitlement. Others, following the example of the existing Medicare Hospital Insurance program, would restrict spending to the amounts available in a separate drug trust fund. For example, under the "Spice" proposal, increased tobacco taxes and a portion of the on-budget surplus would flow into a new trust fund, and the program's expenditures could not exceed the balances in that fund. To keep spending within these bounds, the Spice board would be able to reduce the subsidy to all participants from 25 percent to 10 percent and, to lower the income thresholds for full subsidies.

A third approach to controlling the growth of costs is to index the benefits inadequately. President Clinton's proposal employs this device: after 2009, the benefit cap would increase in synch with the consumer price index. Drug expenditures by the Medicare population will almost certainly increase far more rapidly, as the focus of drug treatments continues to shift from acute to chronic conditions. Thus, inadequately indexing the benefit cap is really a stealth mechanism for eroding the value of the benefit. But the very fact that drug expenditures are growing at a faster pace than spending on other components of health care suggests that drug-relat-

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ed interventions are becoming a more cost-effective input to overall health care.

VOLUNTARY OR MANDATORY?

Participation should be a mandatory; if Medicare beneficiaries were allowed to decide whether to join the drug plan every year or two, only the sick would join and costs would soar. Public subsidies would have to be deep to attract any but heavy users and those with an obsessive aversion to risk. If the system were voluntary and participants were able to choose from competing drug plans, sophisticated mechanisms would be required to ensure that the subsidies compensated plans appropriately for the differential health risks of their members.

The ghosts of 1989 and 1994 – the repeal of catastrophic care and the failure of the Clinton health reform initiative – have frightened lawmakers away from mandatory proposals. Most, however, do recognize that true voluntarism is unworkable, and so they have turned to "faux voluntarism." This gives participants a choice among paying a small amount for a highly attractive benefit now, paying a large amount for the same benefit later, or seeking the benefit in the private marketplace where its cost is likely to be high and its continuity uncertain. Medicare Part B is an example of such faux voluntarism.

President Clinton's proposal adopts this approach. When individuals first enroll in Medicare, they would have the option of signing up for drug coverage that carries a 50 percent subsidy. If the individual had similar or more generous coverage from other sources, the decision could be delayed until this coverage was no longer available. But those lacking drug benefits who initially rejected coverage would have to pay the full cost of the benefit if they enrolled at a later date.

Whether an arrangement like this would attract significant numbers of relatively healthy seniors to offset the costs of the unhealthy ones would depend critically on the design of the benefit and the depth of the subsidy. Deep subsidies would help. The Kennedy/Stark proposal, which has enrollment requirements similar to those of President Clinton's proposal, would ensure broad participation with a 75 percent subsidy. If the benefit were structured as drug assistance from which almost every participant would receive some benefit, low subsidy rates would be less of a problem. But few healthy 65-year-olds would be attracted to an insurance-type plan with a large deductible and a relatively low subsidy rate.

If significant numbers of those turning 65 without other drug coverage decided not to enroll, penalties for late enrollment could prove politically unsustainable. Indeed, Congress would probably relax the rules after it heard a few sickly widows testify that their husbands persuaded them not to enroll when they turned 65.

WHAT SHOULD BE DONE?

Is there a drug benefit that balances good policy with acceptable politics? Some parts of the solution are easier to envision than others. Indeed, some have already found their way into legislative proposals. While the case for a mandatory benefit is strong since it is the best way to spread risk and costs broadly, the failure of previous attempts to mandate coverage make a compulsory approach highly unlikely. The "faux volunteerism" of Medicare's Part B and President Clinton's drug proposal seems acceptable. One need only look at the 97 percent of current beneficiaries who elect to pay for Part B to know that the dilemma of mandatory versus voluntary may be the easiest to finesse in designing a drug benefit.

The question of whether to integrate pharmaceutical coverage into Medicare's current

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benefit design or to craft it as an add-on is somewhat more difficult to answer. But here, too, the outlines of a solution are apparent. As a matter of good policy, the benefit should be integrated. That would reduce complexity for all concerned and bolster the social insurance underpinnings of the enriched Medicare package. However, the heavy subsidization of Medicare's existing benefits makes the program's current structure a fiscally imprudent way to finance drug coverage. The initial solution, then, may have to be a separate benefit with its own financing rules, but an administration integrated with the rest of Medicare.

The benefit could constitute a new part of Medicare. All pharmacies could be certified to dispense drugs to beneficiaries. Like the other parts of Medicare, this one could be administered by one or more private contractors in each region. Although cost-sharing requirements would be different for drugs than for other Medicare benefits, the government could streamline the coverage by collecting premiums through Social Security – as is done now for Medicare Part B. Employers and HMOs that wished to continue to offer drug benefits with first-dollar coverage would be permitted to do so. But any subsidy they received would not cover the increased utilization induced by their lower cost sharing.

What about the question of insurance versus assistance? The Clinton administration opted to ensure that all Medicare participants would gain from its drug benefit by paying 50 percent of the cost from the first prescription on. Because of the costs such assistance entailed, this benefit had to be capped at $2,500. In June 2000, President Clinton added a $4,000 limit on beneficiaries' out-of-pocket prescription drug expenses starting in 2002.

An alternative to the Clinton design would incorporate graduated cost sharing. The program would pay a small portion of beneficiaries' first drug costs, thus ensuring that almost every participant received some benefit. But the government's portion would rise as beneficiaries' drug spending rose, and the program would pick up all expenses above a relatively high threshold.

Budget considerations dictate that beneficiaries shoulder a greater share of the cost of this new coverage than they do for current Medicare benefits. The Clinton plan would have beneficiary premiums pay for 50 percent of the cost of drug coverage.

To keep windfalls to a minimum, employers who now pay for drug coverage could be required to pick up some or all of their retirees' premiums. To ensure affordability, subsidies could be extended to low-income beneficiaries through Medicaid. This could be coupled with taxation of the actuarial value of the subsidy for upper-income beneficiaries.

The most difficult piece of the puzzle is cost containment. Steep coinsurance for initial use might help to control overutilization. It would also be desirable that the Medicare drug program receive the price discounts from pharmaceutical companies that other high-volume purchasers receive. Requiring manufacturers to sell drugs to the organizations administering the Medicare drug benefit at the average price they charge to other large buyers would be a reasonable place to start. Once the benefit is in place, policy makers and analysts could (and should) devote their attention to creating a cost control mechanism that balances the needs of beneficiaries, the burdens on taxpayers, the promise of new therapies, and the financial health of pharmaceutical companies.

As a first step, a drug benefit should strengthen incentives to economize. One place to start would be to improve the information available to decision makers about the

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Drug War: Bush vs. Gore

This issue goes to press before the presidential election. Hence, we're covering all bases with these capsule descriptions of the two candidates' prescription drug proposals. — Peter Passell

Vice President Gore's Medicare prescription drug proposal would pay half of a participant's drug expenditures up to a cap that would start at $2,000 in 2002, grow to $5,000 in 2008, and be increased thereafter to keep pace with drug inflation. Out-of-pocket drug expenditures that exceeded a catastrophic limit – $4,000 in 2002 and increased with drug inflation – would also be covered in full by the program.

Medicare participants opting for this voluntary coverage would pay a monthly premium set to cover half of the costs of the basic benefit; catastrophic coverage would be fully funded from general government revenues. Uncle Sam would pay the full cost of coverage for those with incomes below 135 percent of the poverty threshold, while those with incomes between 135 percent and 150 percent of the threshold would get partial subsidies.

A single benefits manager in each Medicare region would administer the drug program for participants in fee-for-service Medicare. These benefits managers would be just that – managers – and would not bear the financial consequences if their approved outlays for drugs exceeded the program budget.

By contrast, Medicare+Choice plans and employer-sponsored retiree policies that already offer drug coverage would receive fixed cash subsidies, and would be responsible for balancing their drug budgets. The Congressional Budget Office estimates that the Gore plan would cost about $344 billion over 10 years.

Governor Bush's proposal would provide grants to states during the first four years, so they could create their own programs that subsidize drug purchases by Medicare beneficiaries with incomes below 175 percent of the poverty line. These state-designed programs would also be required to provide catastrophic coverage to all beneficiaries with out-of-pocket drug expenditures in excess of $6,000.

For the longer term, Bush proposes a voluntary, alternative form of Medicare insurance that could be used with traditional fee-for-service Medicare, reformed Medicare+Choice plans, or employer-sponsored retiree policies. This would include a cap on a beneficiary's total out-of-pocket Medicare spending exceeding $6,000. Beneficiaries would pay premiums set to cover 75 percent of the cost of the drug component, and all of the cost of the catastrophic component. Those with incomes below 135 percent of the poverty line would receive drugs free. HMO and employer-sponsored plans would have considerable flexibility to design their own drug benefits.

Because many critical elements of the plan are left unspecified, it is impossible to estimate its costs. However, his campaign documents put the cost at $159 billion over the next 10 years.

relative costs of therapeutically equivalent drugs. Currently, when a prescription is written in a doctor's office, neither the physician nor the patient has any idea what the full cost or the out-of-pocket cost of the drug will be, let alone the costs of alternative drugs. This is understandable considering that there are thousands of insurance plans, each with its own drug costs and copayments.

However, such information could be made routinely available. Every participating physician could be required to obtain a Palm Pilot-like device that would display the costs for the medication as well as its therapeutic equivalents. Once the physician and patient reached a decision, the prescription could be transmitted electronically to the patient's pharmacy. As with other Medicare innovations, private insurers might adopt similar mechanisms, and economic incentives might play a greater role in restraining the growth in drug expenditures.

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Uranium

Economic Interest Vs.

How could the impulse to privatize a federally owned enterprise undermine the urgent goal of dismantling post-Soviet Russia's vast stockpiles of nuclear weapons?

When a Democratic-controlled Congress and the Bush Administration agreed in the early 1990s to sell off America's two giant plants for making commercial nuclear reactor fuel, advocates of privatization never looked beyond the political advantages in

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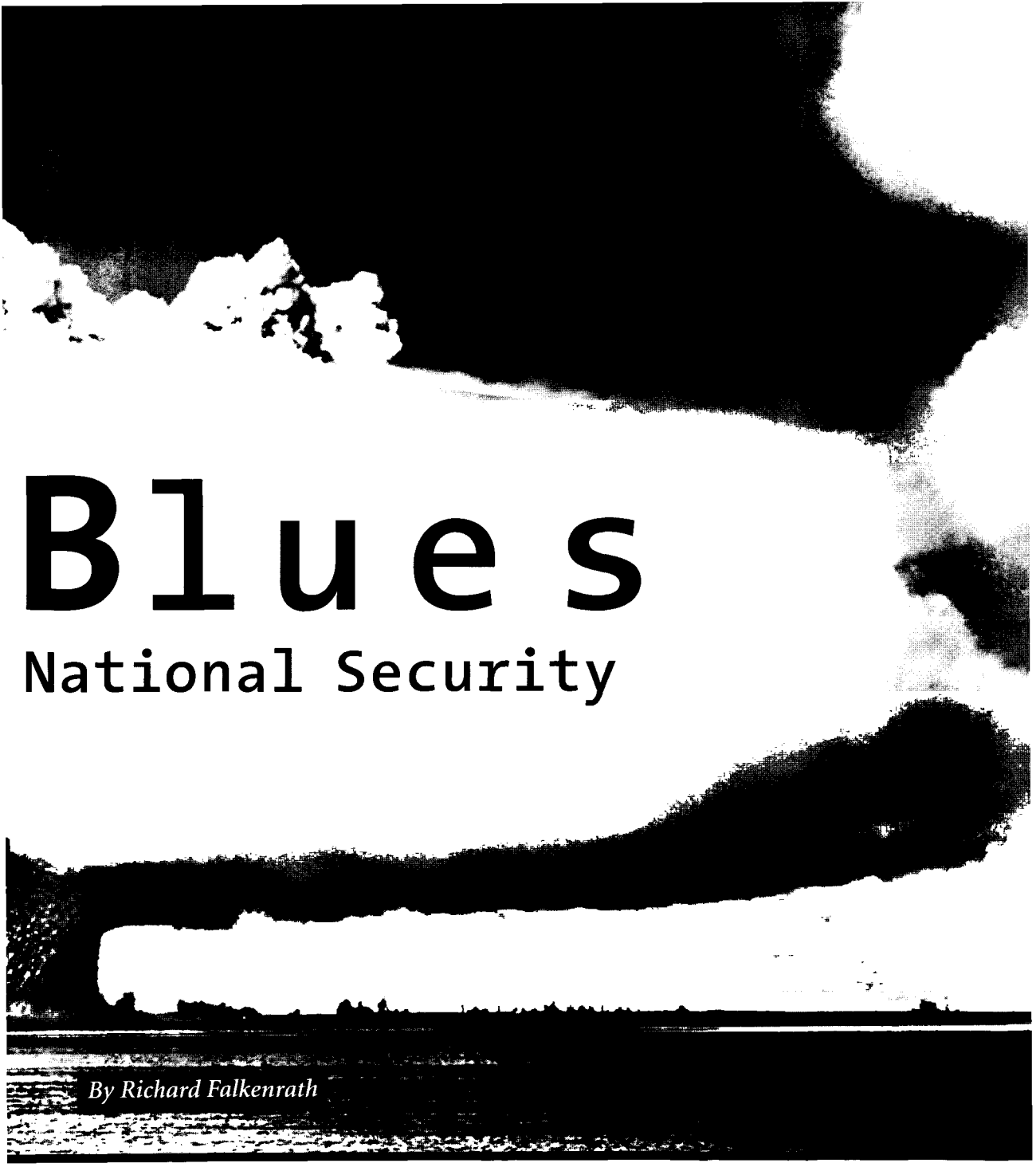

Blues

National Security

By Richard Falkenrath

making government a little smaller and making the Treasury a little richer. But it is now quite plain that the privatization of the little-known and less-understood United States Enrichment Corporation – USEC, for short – has fragmented America's anti-proliferation efforts, and putting the pieces back together will not be easy.

First, some basics. Nuclear fission makes big explosions, or lots of heat in a contained

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area that can be converted to electricity. But "natural" uranium, as it comes from the ground, will not fission without a lot of help from engineers. It generally must be "enriched" – a physical process by which the amount of the uranium isotope U-235 is raised from 0.7 percent to 3 to 5 percent of the mass of the metal for reactor fuel, or to 50 to 90 percent for the "highly enriched uranium" used in bombs.

Since the process of enriching uranium is essentially the same whether the end product is reactor fuel or nuclear weapons, uranium enrichment technology has been carefully controlled. For this reason, the uranium enrichment industry that emerged in the United States, Europe and the former Soviet Union has traditionally been owned and operated by governments. The United States built three huge uranium enrichment plants to meet the needs of the military, and later used the plants to meet the demand for nuclear reactor fuel from the emerging commercial nuclear power industry.

But by the late 1980s, as Thatcherite winds began to reach American shores, Washington started giving serious thought to the idea of privatizing the United States government's enrichment enterprise. A first step, mandated by the Energy Policy Act of 1992, was to create a government-owned corporation called the United States Enrichment Corporation. In July 1993, this enterprise assumed responsibility for operating the Energy Department's two enrichment plants, one in Paducah, Kentucky, and the other, known as the Portsmouth plant, in Piketon, Ohio. (The third enrichment plant, at Oak Ridge, Tennessee, had been dedicated to enriching uranium for bombs and special military reactors and was shut down in the mid-1980s.)

USEC's management team, which was drawn from both Wall Street and the Energy Department, was directed to develop and implement a plan to sell the corporation to investors. After much wrangling over the details, 100 million shares in USEC were finally offered to the public in July 1998. At an initial price of about $14.25 per share, this privatization netted the U.S. government about $1.38 billion after underwriting costs. USEC also gave the Treasury $500 million that it had borrowed from commercial banks – a sweetener to the privatization deal that now eats into the corporation's narrow profit margins.

Two years later, it has become obvious that the privatization of USEC was both bad public policy and an embarrassing failure for its management. The original investors are not likely to argue with that assessment: USEC's stock price has fallen to about $4.50 a share and its debt has been downgraded to junk status. Meanwhile, its share of the world enrichment market has declined as foreign competitors have inched their way into protected domestic markets.

The corporation has no modernization plan for its aging, relatively inefficient plants. Indeed, USEC has announced its intention to close the Portsmouth plant in 2001, though the government may keep it alive. And the company's desperate efforts to bring in revenue with the bargain-basement marketing of its inventory of natural uranium – part of its dowry from the Energy Department – have seriously undermined what little remains of the United States' uranium mining and conversion industries.

Worse – much worse – the privatization has jeopardized an important United States national security initiative: the United States-

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Russia Highly Enriched Uranium Purchase Agreement, known simply as the "HEU deal." Like the decision to privatize enrichment facilities, this deal originated in the Bush Administration and had bipartisan support. The basic idea was (and is) to encourage post-Soviet Russia to dismantle its excess nuclear weapons by purchasing the highly enriched uranium they contain. This bomb-grade uranium is then to be blended down with natural uranium to "low enriched" status and recycled as fuel for commercial nuclear power plants.

This elegant swords-to-plowshares arrangement was planned to run for 20 years and to involve the elimination of at least 500 metric tons of Russian HEU that would be purchased for a total price of about $12 billion. The arrangement would destroy the fissile material of thousands of nuclear bombs – material that would otherwise be vulnerable to theft. The HEU deal was also seen as a vital source of hard currency for converting Russia's closed nuclear weapons plants (as well as its hordes of underemployed nuclear scientists and technicians) to peaceful purposes.

At the beginning of the HEU negotiations, Washington decided that the government-owned USEC would be the sole United States agent for overseeing the purchase, conversion and resale of the Russian HEU. This was a fateful mistake. The United States officials who negotiated the HEU deal were not intimate with the details of the commercial nuclear fuel market and failed to appreciate that, once privatized, USEC would have commercial interests exactly contrary to the United States' security interests. But that ignorance did not extend to the USEC management team, which understood that the enriched uranium from dismantled Russian nuclear weapons would crowd out their own production of enrichment services.

It has become obvious that the privatization of USEC was both bad public policy and an embarrassing failure for its management.

Further jeopardizing the government's goals, USEC's marginal costs of production for enrichment services in 1993 to 1995 were substantially below the price Washington had initially agreed to pay for the Russian highly enriched uranium. This would mean that USEC would be forced to buy Russia's surplus material for more than it cost to enrich uranium at the Portsmouth and Paducah plants.

Not surprisingly, then, the deal has teetered on the brink of collapse for the past six years. As of August 2000, USEC had purchased some 95 metric tons of highly enriched uranium from Russia. But we know this quantity was below the deal's full potential since USEC has declined Russia's offers to accelerate HEU deliveries to the United States. Moreover, simply getting USEC to accept delivery of the 95 tons has required constant pressure from a small group of federal officials who have other things to do.

Note, too, that the HEU agreement has been bedeviled by technical, financial, regulatory and political problems. In virtually every case, the burden of finding a solution has fall-

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en on the United States government rather than on USEC, because the enrichment corporation has no commercial interest in facilitating the deal's execution. Indeed, the United States government has effectively coerced virtually every purchase of Russian uranium that USEC has made. Only in late 1996 were USEC managers maneuvered into signing a profit-reducing five-year deal with Russia that legally committed USEC to buy specific amounts of Russian HEU for the politically agreed-upon price. USEC only signed this agreement because its management needed to defuse mounting political criticism of the looming privatization.

The privatization of USEC and the implementation of the HEU deal is, in short, a mess – and one that is nearly certain to get messier with the passage of time. How did we get there? More important, how can we get out of it?

Policy acts shape the future environment by creating constituencies that gain from the policy, who will then fiercely resist any changes that take away these gains.

THE ORIGINS OF POLICY FAILURE

In trying to explain how the HEU deal came to be so badly implemented, there is a strong temptation to dwell on *ad hominem* explanations. It would be easy to point to the incompetence or ignorance of specific individuals involved in this process. But such explanations are unsatisfactory in important respects because they obscure deeper economic forces at work.

A more useful explanation lies in two general phenomena that are familiar to most economists but to relatively few national security experts. The first is the principal-agent problem. It arises from the reality that the people responsible for carrying out complex tasks rarely have interests identical to those of their bosses. And what economists call "information asymmetries" typically make it difficult for principals to monitor the extent to which their agents are working on their own behalf.

The implementation of the HEU deal creates an exceptionally severe principal-agent problem. The "principals" in question are the president of the United States and his senior foreign affairs experts who make and monitor national security policy. The interest they sought to advance through the HEU deal was, of course, the nuclear disarmament of post-cold-war Russia and the reduction of weapons-grade uranium that could end up in the hands of rogue states or terrorists. But this was obviously only one public policy goal among many. None of the United States officials involved in the HEU deal understood the Byzantine institutions of the nuclear fuel market or the uranium enrichment industry. And no national security official in the entire United States government was assigned to work full time on keeping track of the HEU deal.

The agent in the HEU deal was, of course,

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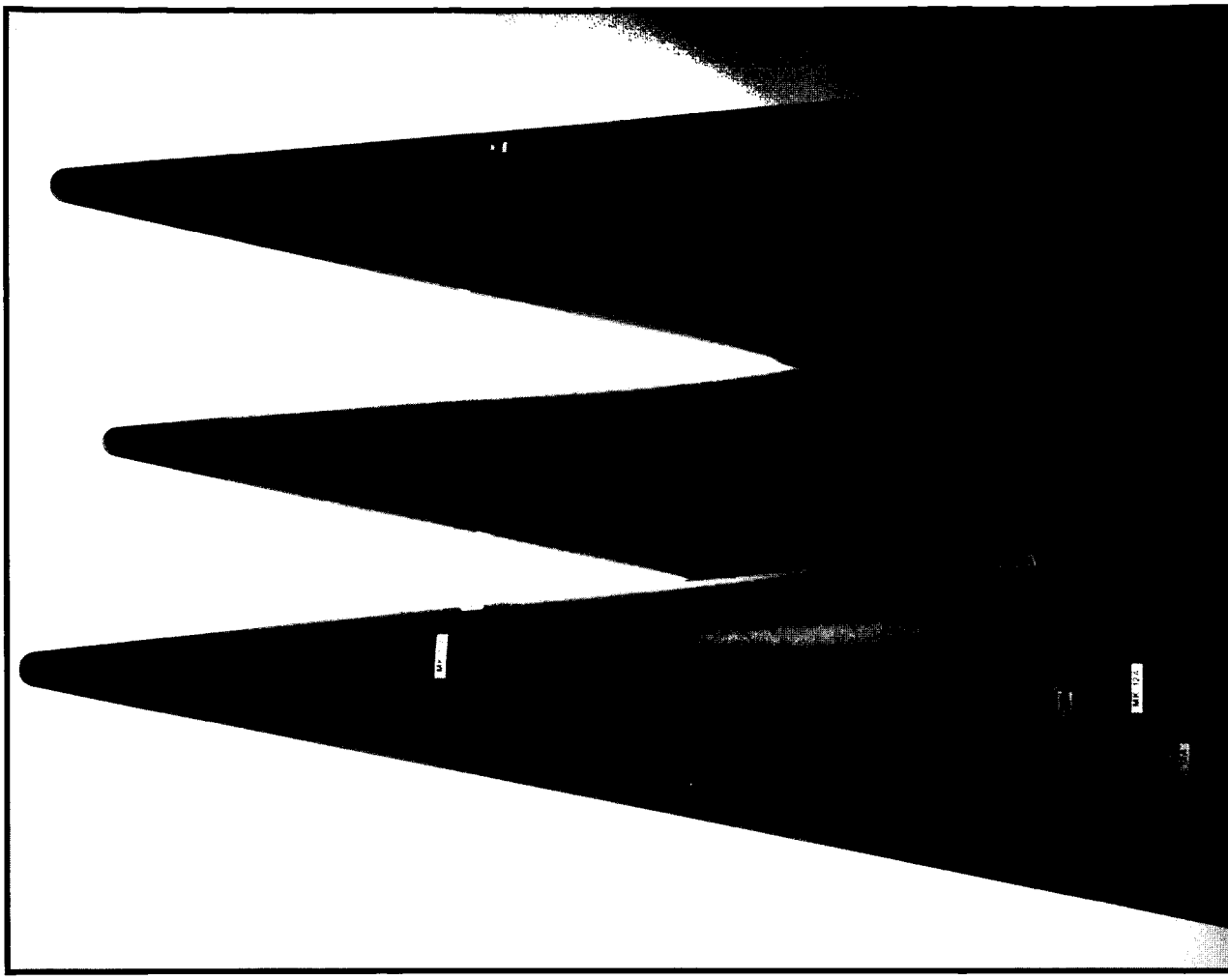

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USEC, which, even before the privatization efforts were geared up, was controlled by a small group of men with both highly focused private interests in the matter and a deep understanding of the uranium enrichment industry and market. Between 1992 and 1998, their mission was to develop and implement a plan for the full privatization of USEC, generating the highest possible return for the United States Treasury and establishing a foundation for USEC's future commercial success. Success would – and did – mean that they would make the transition from being government officials or officers in a government-owned corporation to becoming the senior managers of one of America's 500 largest corporations, with commensurate pay and perks. They thus had a powerful personal incentive to ensure that USEC would become a private business with minimum enforceable obligations to Washington.

During USEC's transition to full privatization, the USEC management team did everything in its power to improve its future commercial position by acquiring government assets and securing special privileges. Much of

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this was perfectly understandable, given the requirements of a successful privatization of a government-owned industry. But in the case of the HEU deal, the USEC management team systematically advanced USEC's commercial interests at the expense of national security. The severity of the principal-agent problem prevented the responsible national security officials from understanding what was happening to the HEU deal until it was too late. The fox, in short, was put in charge of the chicken coop.

The idea that something could be "too late" for corrective action by senior policy makers points to the second fundamental factor behind the failures of USEC privatization and the HEU deal. "Path dependence" refers to the idea that once the basic direction and outline of a policy has been set, it becomes increasingly difficult to change course. There are many reasons for this. Changing policies consumes time and imposes other types of "transaction costs" on busy public officials. Further, as the Princeton University game theorist Avinash Dixit has noted, "policy acts shape the future environment by creating constituencies that gain from the policy, who will then fiercely resist any changes that take away these gains."

Conversely, public officials are loath to admit that they are wrong, once they have signed off on a policy. Nobody likes to go to one's superiors with new information that reveals the inadequacy of one's previous advice.

In the history of USEC privatization and the HEU deal, three "paths" have intersected to make this conflict effectively unresolvable, at least for the Clinton Administration. The first was privatization itself – particularly the assumption that USEC's expertise made it the appropriate party to manage the HEU deal. The second concerns the details of the contract for the disposition of the Russian highly enriched uranium, which was negotiated in late 1993 and signed in January 1994. And the third is the complication introduced by the hoary "anti-dumping" rules that are hardwired into United States trade practices.

Path 1: A privatized USEC as HEU deal executive agent

The troubles of the HEU deal were preordained by the Energy Policy Act of 1992. Proposed by the Bush Administration and passed by a Democratic Congress in October 1992, the act set in motion the privatization of the government's uranium enrichment enterprise. It also specifically authorized USEC to purchase highly enriched uranium from the former Soviet Union under a government-to-government agreement, which had been initialed by United States President George Bush and Russian President Boris Yeltsin in August 1992. Thus the basic elements of America's future implementation of the HEU deal were enshrined in law well before detailed negotiations on the transaction had begun.

The U.S. government has been struggling to compensate for this mistake ever since. The crux of the problem, of course, is that a privatized USEC has commercial interests at stake in the HEU transaction that are decidedly at odds with the United States' security interests. This conflict was particularly sharp in the early days of the deal, when USEC's production costs were still relatively low. As long as USEC's marginal cost of enrichment services is less than the price it must pay Russia, the corporation will have no interest in substituting weapons-derived Russian uranium for its own, more profitable production. And even if USEC's marginal cost rises to such a point that the Russian imports do not actually

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diminish the corporation's profits, USEC will still be inclined to time the flows according to its narrow commercial interests.

Reflect a moment on why this happened. In the run-up to the Energy Policy Act, a small group of Energy Department officials and Wall Street consultants developed plans for the privatization of the United States enrichment enterprise. This group, led by USEC's current president and chief executive, William H. Timbers Jr., would later constitute the senior USEC management team. From the beginning, the USEC managers understood the full commercial implications of a large influx of Russian weapons-derived enriched uranium. At the time, USEC had about 75 percent of the United States uranium enrichment market and about 40 percent of the global market. Imports from Russia at the levels envisaged by Presidents Bush and Yeltsin would displace more than half of USEC's domestic market share.

By contrast, the United States government officials who negotiated the HEU deal in 1992-93 had only a limited and hastily acquired understanding of the deal's commercial implications for its designated executive agent. They willingly accepted USEC's leading role and acquiesced as the USEC management team took increasing responsibility for negotiating the details of the HEU transaction with the Russian government. These officials had other matters to oversee and so were understandably taken by the idea that the HEU deal could be implemented "on a commercial basis," requiring no direct expenditure by the United States government and without day-to-day involvement by government bureaucrats.

Path 2: The HEU contract

The HEU "deal" is actually a bundle of agreements. The outlines of the deal, establishing the general principles and scope of Russia's sale of weapons-derived HEU to the United States, are specified in a government-to-government agreement signed by American and Russian officials in February 1993. Arguably the more important document, though, is the HEU purchase contract, a commercial agreement that was initialed by the U.S. government in May 1993, and then signed in January 1994 by the newly established USEC. The American negotiator of this contract was Phil Sewell, a Department of Energy official in charge of enrichment operations who joined USEC management shortly after the corporation was established. The conflicts between USEC's commercial interest and U.S. security interests were first revealed by the way the future senior vice president of USEC translated the general principles of the government-to-government agreement into a commercial contract.

The basic elements of America's future implementation of the HEU deal were enshrined in law well before detailed negotiations on the transaction had begun.

The key provisions of the HEU contract concern how Russia would be compensated for the weapons-derived enriched uranium it sold to the United States. First, the contract specified that Russia would be paid separately for the "enrichment component" and the

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"feed component" of the enriched uranium it shipped. This arrangement reflected the way nuclear reactor fuel markets worked in the past: nuclear power companies buy natural uranium feed from a mining company and ship it to an enrichment company, like USEC, which holds the feed in trust and is paid only for enriching it.

for the enterprise. For, even though the prevailing retail price of a SWU at the time was about $110, purchasing Russian SWU at $82 instead of producing it in the United States for $60 would reduce the enrichment corporation's profits. The HEU contract negotiated by USEC with the Russian representatives gave USEC the latitude and leverage it would later need to negotiate a lower price or simply

USEC's five-year deal with Russia was a calculated one, sacrificing profits for appeasement of the defenders of national security, and it achieved the desired effect.

Now, the government-to-government agreement said that the United States would purchase at least 10 metric tons of highly enriched uranium annually for the first five years of the deal, and then 30 metric tons annually for the next 15 years of the deal. The highly enriched uranium contract, on the other hand, said that USEC had *the option* to purchase quantities *up to* these levels. The contract further stipulated that the price paid by USEC to Russia would be renegotiated every year. This meant that the HEU deal could come to a grinding halt in any year if USEC and Russia's executive agent failed to agree on a price.

In the government-to-government discussions, the United States had effectively pledged Russia a price of approximately $82 per "separative work unit" (SWU), the standard measure of enrichment services. Producing SWUs was USEC's core business. Thus, since USEC's marginal cost of production was believed to be about $60 per SWU, the politically agreed-upon price was a loser to walk away from the purchase commitment.

The enrichment component typically represents about two-thirds of the value of nuclear reactor fuel. The other third is the natural uranium "feed" that, as noted earlier, goes into the enrichment plant with 0.7 percent U-235 and comes out with 3 to 5 percent U-235.

The government-to-government agreement pledged that the United States would pay Russia $28.50 per kilogram of uranium feed that it shipped to America. The HEU contract, however, specified that Russia would be paid for the feed component of its HEU only when that material was "used or sold" by USEC – and that the price paid was subject to renegotiation every year. This provision meant that Russia would only be compensated for the feed component of its HEU deliveries if USEC went to the trouble of marketing the feed on the open market or consuming the feed in its own enrichment operation. In other words, the original business contract left USEC to decide when, if ever, Russia

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would be compensated for one-third of the value of its HEU shipments to America.

From USEC's commercial perspective, the January 1994 contract provided a nearly ideal structure for the transaction. The market that USEC really cared about was the enrichment market, and the commercial imperative here was to persuade Russia to accept a SWU price that was substantially below the $82 agreed upon by the governments. The annual price renegotiation called for in the HEU contract provided an appropriate opportunity to achieve this goal. Indeed, USEC placed no immediate orders for Russian HEU and set about arguing for a lower SWU price.

For those who cared about the security interests at stake in the HEU deal – the very large dog connected to the relatively modest commercial tail – this arrangement was a disaster. However, its full implications did not become apparent until nearly a year and a half after the HEU contract had been signed, when the Russians walked out of negotiations with USEC over the SWU price. By this time, it was effectively too late for the Clinton Administration's national security team to correct the HEU deal's basic design flaw. They had gone too far down the path of giving USEC authority to control the details of HEU transactions. The White House was either unwilling to admit its earlier mistakes or never fully conscious of the ramifications for nuclear proliferation.

Between 1995 and 1998, the USEC management team and national security officials were locked in an ongoing struggle over the HEU deal. But it was a quiet and carefully circumscribed conflict. Before full privatization, USEC had to walk the line between protecting its future commercial interests vis-á-vis the Russian HEU and not antagonizing the United States government sufficiently to jeopardize the last, most important step in privatization – the initial public offering of stock in the corporation. President Clinton did not sign off on USEC privatization until July 1997, and the initial public offering did not take place until a year later. Until that transaction was complete, the USEC management team would not be candid about its commercial interests in the HEU deal, while the United States government could never really admit the mistake it had made in assessing USEC's real interests.

USEC privatization appeared to be in jeopardy only momentarily, in the summer of 1996, when it became known that USEC had quietly declined Russia's offer to increase that year's HEU sale from 12 metric tons to 18 metric tons. This triggered harsh public criticism of USEC management and caused Senator Pete Domenici, the New Mexico Republican who was the key Congressional proponent of USEC privatization, to threaten to withdraw his support. To defuse this crisis and clear the way to an IPO, USEC signed a five-year agreement with Russia in December 1996 that obligated it to pay the government-agreed price. America's imports of Russian weapons-derived enriched uranium over the past three years thus owe everything to this five-year deal and the events that preceded it. When the agreement expires in 2001, either America's importation of Russian HEU will end, or an alternative method of executing these purchases will have been found.

Put it another way: USEC's five-year deal with Russia was a calculated one, sacrificing profits for appeasement of the defenders of national security, and it achieved the desired effect. Official skepticism about the prudence of USEC privatization in light of the potential conflict with national security all but evaporated. A few outside experts spoke up against privatization, as did the labor union representing the workers at USEC's two plants.

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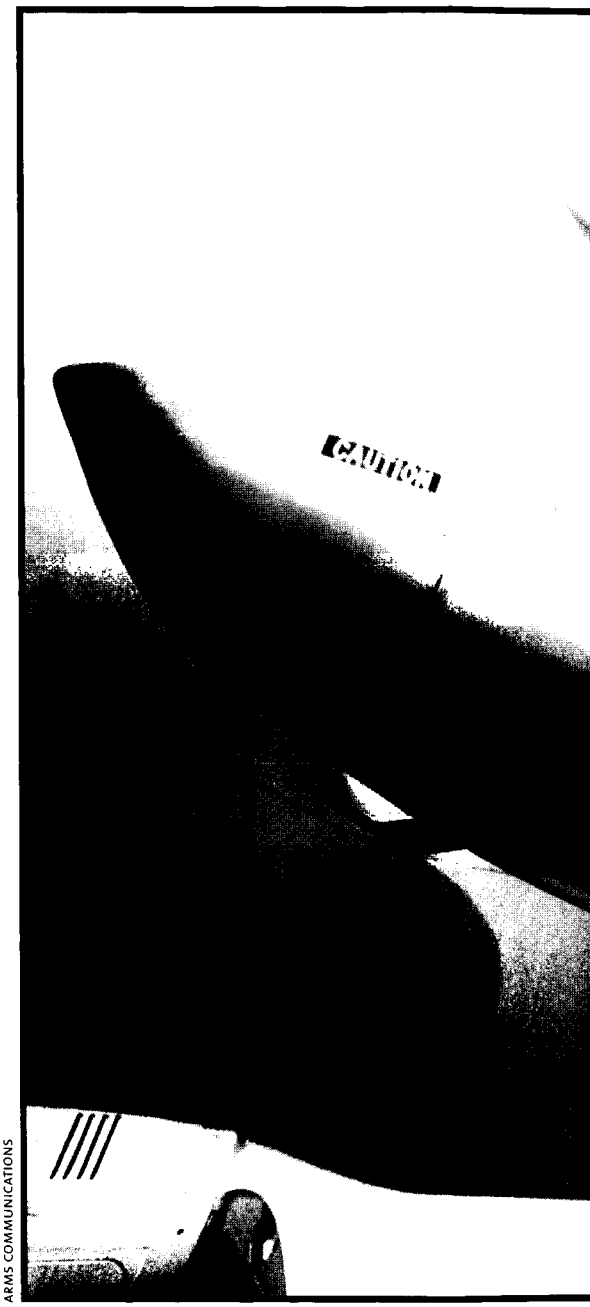
Within the government, however, only the chairman of the Council of Economic Advisers, Joseph Stiglitz, argued against privatization. With the responsible national security officials mute, Stiglitz's objections were brushed aside and the last steps of privatization went forward without a hitch.

In 1999, the newly privatized USEC asked Congress for a $200 million subsidy to carry out that year's mandated purchase of weapons-grade uranium from Russia. The answer from the Clinton Administration and Congress was an indignant "no." But the outrage was misplaced: USEC's request for a subsidy was entirely predictable. Official Washington was merely being confronted with the product of its own mistakes of 1992 to 1994 and its own failure to correct them when it had the chance from 1995 to 1998.

Path 3: The United States anti-dumping law

A third complication for the HEU deal long predates the development of the uranium enrichment industry: the highly protectionist provisions of the Anti-Dumping Act of 1916. Although nominally intended to prevent foreign producers from selling below cost in the United States and then raising prices when they had succeeded in destroying their American competitors, the anti-dumping law is now essentially a protectionist barrier designed to stop foreigners from selling at prices their American competitors do not care to match. The rules are enforced by the Commerce Department, which is strongly inclined to see merit in domestic consumers' complaints.

In 1988, the Soviet Union began to export natural uranium to the United States. This was a new supply source on the global uranium market because the cold war had previously held potential Soviet exports in check. Exports from the Soviet Union, compounded by a market manipulation scheme by one American importer, drove down the price of natural uranium by half in 1991. And in



ARMS COMMUNICATIONS

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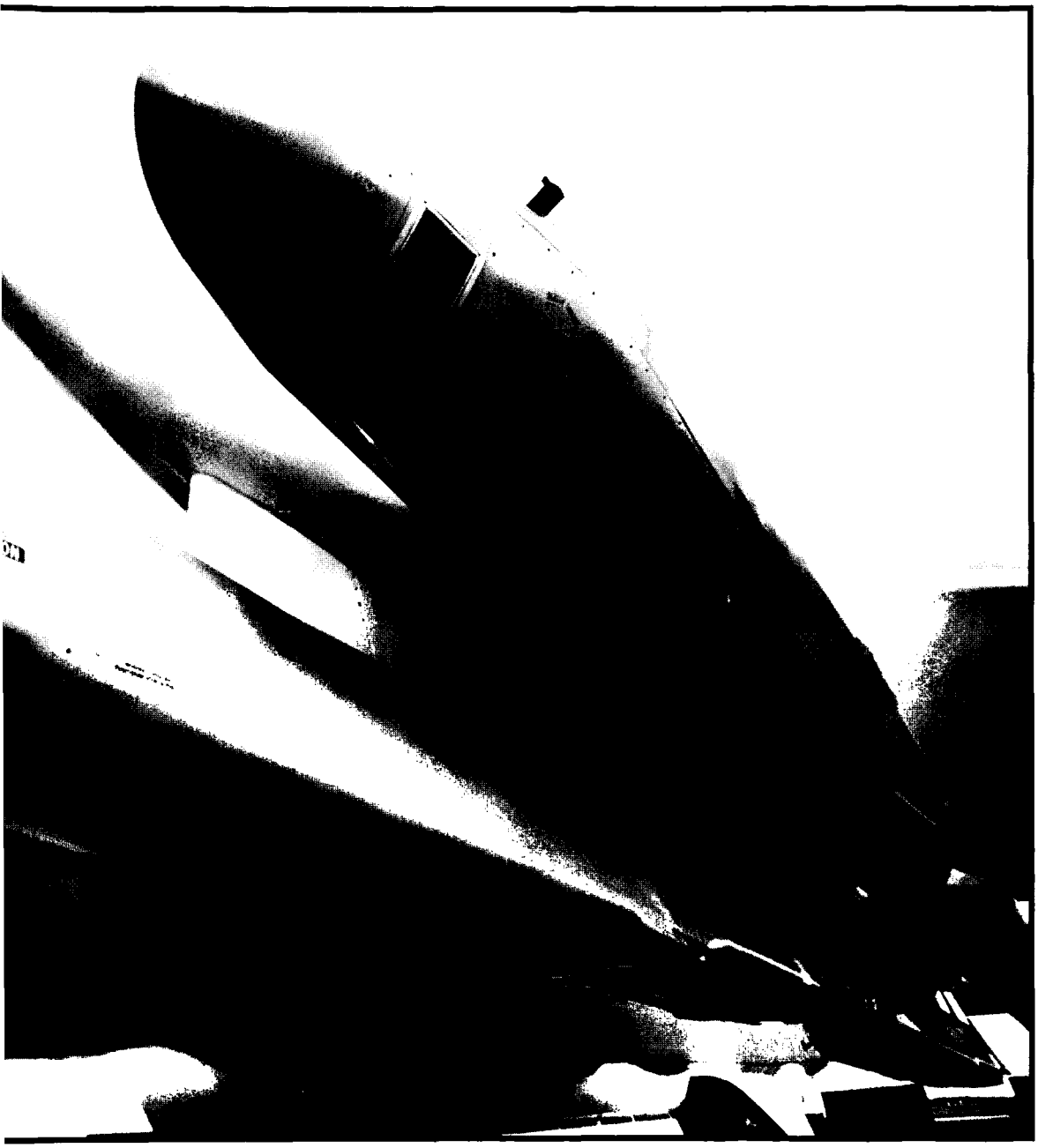

November of that year, a coalition of domestic uranium mining companies petitioned the Commerce Department to investigate uranium imports from the USSR.

The key step for Commerce was to determine the "fair value" of Soviet-origin uranium. Following convoluted procedures for imports from non-market economies that are specified in amendments to the anti-dumping laws, Commerce determined that the "fair

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value" for Soviet uranium imports was about four times the world market price. This was absurd. Uranium had not been sold for this much since 1981, when uranium prices were inflated by perceived energy shortages and overly optimistic projections for nuclear power. More to the point, the figure was far above the cost of production of all viable uranium mines in the world.

Nonetheless, Commerce bureaucrats imposed a duty of 115 percent on uranium imports from the former Soviet Union in May 1992. Bizarrely, this duty also applied to the enrichment content of any uranium imported from the former Soviet Union.

The uranium imports from the Soviet Union that had prompted the anti-dumping suit were not derived from weapons. It was ordinary uranium that the Soviet government had mined for future use in power reactors. United States national security interests were thus not directly at stake. However, the Commerce Department was aware of negotiations between the Russian and American governments over an HEU deal, and consequently ruled that uranium derived from HEU would not be subject to the prohibitive anti-dumping duties. This exemption finessed opposition to the anti-dumping suit within the Bush White House when it initialed the first government-to-government agreement on HEU in August 1992.

Things began to go wrong, however, when the Commerce Department negotiated a "suspension agreement" with the Russian government. United States anti-dumping law allows Commerce to suspend anti-dumping duties if the offending importer agrees to regulate its sales in some other way that reduces competitive pressure on American producers.

In response to lobbying from domestic uranium interests (most of which, ironically, were owned by foreign companies), the Commerce Department ignored its earlier agreement to exclude uranium imports mandated by any government-to-government deal on weapons-grade uranium. The suspension agreement initialed by Commerce and the Russian government in September 1992 extended United State trade restrictions to the natural uranium feed contained in any future shipments of Russian weapons-derived HEU. This seemingly minor step on behalf of the United States uranium industry would severely complicate the lives of the United States officials who would work over the coming years to implement the HEU deal.

A suspension agreement governing the sale of Russian uranium in the United States is still in force, but its provisions have been renegotiated several times. The details are not crucial for the purposes of this article, but its impact on the execution of the HEU deal has been clear. The combination of a United States executive agent with contrary commercial interests and an extraordinarily complicated trade regime that is controlled by an insular, protectionist-minded bureaucracy has been deadly. USEC has been able to shift the blame for the failures of the HEU deal to the ostensibly separate issues concerning the natural uranium feed component and the suspension agreement with Russia. United States officials and most outside experts, on the wrong side of a severe information asymmetry, could never really be sure what was going on.

The United States government has been forced to intervene repeatedly to find ways to compensate Russia for the natural uranium feed component of its HEU deliveries to the United States. And in focusing on this issue, the government has been distracted from the more fundamental issues of USEC's conflict of interest and the flawed structure of the

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HEU contract. After many fits and starts, and several attempts by USEC to exploit the feed issue to its own commercial advantage, the Clinton Administration finally brokered an arrangement in March 1999 that would allow the Russian feed to be marketed by three separate nuclear fuel companies in return for a one-time federal subsidy of $325 million. At the moment, most of the Russian feed is simply being shipped back to Russia for safekeeping – hardly a permanent solution to the conflict between America's interest in stopping nuclear proliferation and the commercial interests of the uranium industry.

The fiscal implications of USEC nationalization are trivial compared to the national interest in securing and downsizing the vast nuclear arsenal that Russia inherited from the Soviet Union.

WHAT TO DO?

National security officials have kept the HEU deal limping along for the past six years through a succession of ad hoc, convoluted fixes. But these ongoing efforts will ultimately founder on the rocks of USEC's bottom line. Today, there are only two decent options for fixing the fundamental flaws in the execution of the HEU deal. The first is to designate alternative or additional executive agents to defend national security interests. The second is to return USEC to the government fold and run the enterprise with the public interest in mind.

The idea of an additional or alternative executive agent for the HEU deal has been discussed since 1995 and is allowed by law. (From 1995 to 1997, when confronted with evidence of USEC's conflict of interest, the Clinton Administration argued that the mere threat of designating an alternative executive agent would compel USEC to execute the HEU deal faithfully. No such luck.) The basic idea is that another company that did not already enrich uranium would see the Russian HEU as an opportunity to expand into the hard-to-crack market for nuclear fuel.

A cleaner solution, though – one that could not be undermined by byzantine commercial interests – would be for the United States government to buy USEC back from its current owners. Such a step only a few years after the privatization would constitute an extraordinary policy reversal and uncommon admission of policy failure. It would no doubt embarrass many of the federal officials and legislators involved in the deal. But it would solve the fundamental problem that has bedeviled the United States implementation of the HEU deal.

Given that USEC's stock price has fallen from more than $16 in September 1998 to around $4.50 a share two years later, Washington might be able to buy USEC back at no net cost to the American taxpayer. But regardless of the final buyback price, the fiscal implications of a USEC re-nationalization are trivial compared to the national interest that would be served in securing and downsizing the vast nuclear arsenal that Russia inherited

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from the Soviet Union. At a minimum, this would ensure that the current HEU deal could be implemented as envisaged in 1992 and 1993. More ambitiously, however, returning USEC to government ownership would allow the United States to increase the scale of its purchases of Russian weapons-derived HEU. Such an expansion has independent value as a nuclear security initiative, but it may also prove valuable for achieving other foreign policy objectives with Russia, such as further nuclear weapons reductions or further consolidation and disposal of excess nuclear weapons materials.

Buying USEC back from its current owners would serve other interests as well. It would allow the United States to ensure that it maintained an adequate enrichment capacity for all future contingencies. Rather than paying high dividends, as USEC currently feels compelled to do to keep the stock price above sea level, a government-owned USEC could use its very substantial cash flow to maintain its aging plants – the company has floated the idea of closing a plant in 2001 – or to develop more efficient enrichment technology. Moreover, as a government-owned corporation, USEC would be less likely to abuse its economic monopoly power. This would ease the Justice Department's regulatory burden in the nuclear fuel market.

A re-nationalized USEC could also contribute to price stability in the markets for natural uranium, conversion services, enrichment and fuel fabrication by moderating the rate of its sales and refraining from manipulative marketing schemes. In any event, there is a real possibility that USEC will go bankrupt, in which case the plants in Kentucky and Ohio will simply revert back to the United States government, which remains responsible for decommissioning and decontaminating the plants.

It will no doubt be argued that a government-owned USEC would be less efficient than an investor-owned USEC. Insofar as a government-owned corporation is less likely to trim excess capacity through plant closure, this may well be so. But there is no evidence to suggest that a privately owned USEC is significantly more efficient than a government-owned USEC in which the plants are operated under performance-based contracts with a major private-sector industrial corporation.

This, in fact, is how the two enrichment plants were operated until USEC canceled its operating contract with Lockheed Martin Energy Systems after privatization. (Lockheed Martin, after all, had tendered a bid to buy the corporation from the government in 1998 that, if successful, would have put the USEC management team out of business.)

The bottom line is that the privatization of the United States Enrichment Corporation was a dreadful error. It was a mistake because USEC has significant monopoly power in the nuclear fuel market. It was a mistake because the United States has important national interests in maintaining a domestic uranium enrichment capacity.

It was a mistake because the nuclear fuel markets are highly volatile and the United States government is better able to play the role of stabilizer than a private company focused on profits. But, most important, it was a mistake because of its fundamental conflict with the unique post-cold-war mission of securing and eliminating the vast overhang of Russian nuclear weapons – nuclear materials that, if left alone, could fall into the hands of America's enemies. Can there be any doubt that this goal deserves priority over the largely symbolic question of whether the government should own two aging industrial plants in the Midwest? M

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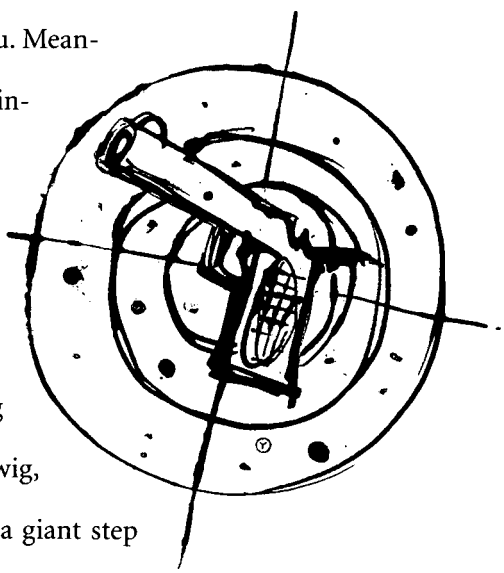
Gun Violence
The Real Cost

ILLUSTRATIONS BY YÜCEL

Mention of gun control seems to be an invitation to muddled thinking. According to the gun lobby, "guns don't kill people, people kill people" – a comforting call to personal responsibility, unless one of those irresponsible people happens to be waiving a Glock at you. Meanwhile saner humans, frustrated by the seeming political invincibility of the folks who think the world is run by Henry Kissinger and Queen Elizabeth II, are reduced to championing gun buyback programs in which anybody can sell anything that shoots bullets to local governments – and then use the money to buy something more lethal. ¶ Two economists, Phil Cook and Jens Ludwig, of Duke and Georgetown Universities, respectively, take a giant step toward restoring rationality to the debate. In their new book, *Gun Violence: The Real Cost* (©Oxford University Press) they estimate that gun mayhem costs Americans



BY PHIL COOK AND JENS LUDWIG

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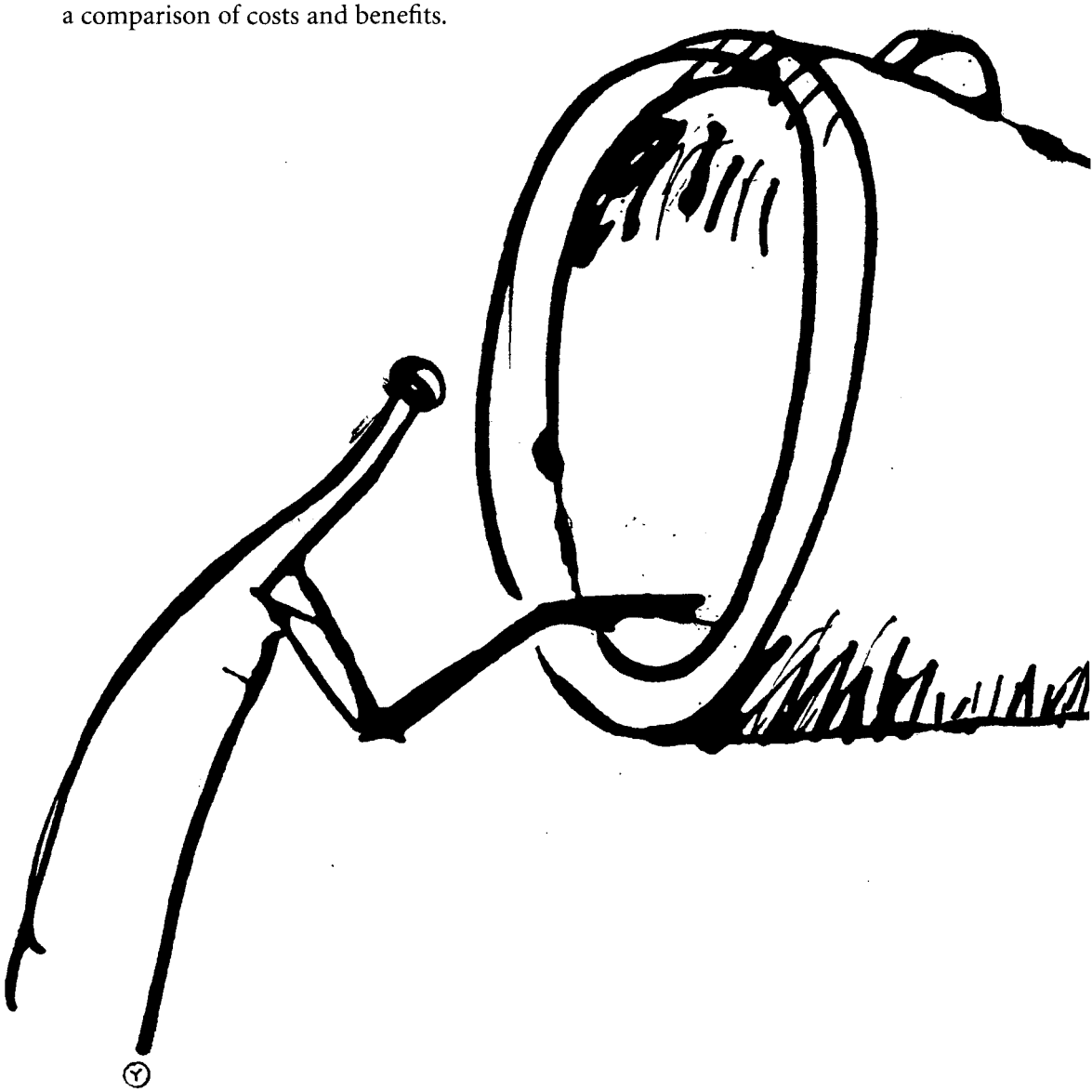
$100 billion annually – most of it, strikingly, in the form of the psychic cost of worrying that they or their loved ones will be the next victims. Perhaps more important, the authors coolly examine a host of proposed policy remedies, comparing the prospective costs and benefits of each. ¶ Some will say this isn't economics. Indeed. But it is smart, sensible policy analysis, and a model for policy makers who understand that economics offers the handy-dandy matrix for assaying virtually any policy choice that requires a comparison of costs and benefits.



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The urge to put a dollar value on

life and limb comes naturally to economists. To normal people, however, it may seem unnecessary and even a bit perverse. In particular, they may question why we have gone to the trouble of estimating the effects of gun violence on the standard of living. How is it helpful to translate fear, pain, disability and early death into the metric we ordinarily use in measuring the value of food, shelter and transportation?

We have two answers. First, if gun violence is to compete effectively for attention in the public forum, it needs to be calibrated against the myriad other problems that lay claim to the public fisc. Since gun violence, by our estimate, costs society about $100 billion annually, it is certainly a large enough problem to support a case for greater attention.

Our second answer is more substantive. The economic cost framework provides a different and more useful perspective on this problem than does the usual array of public health statistics. Reference to the annual toll of 30,000 gun deaths and 80,000 serious injuries puts the focus on the immediate victims, and invites the question of how the victims are different from the rest of us. It is all too easy to discount the suicides as mentally ill, and the assault victims as careless or criminal.

The economic framework redirects attention from the narrow, after-the-fact accounting of victims, to a broader, before-the-fact accounting of the threat and the costly efforts to minimize that threat. The problem of gun violence is really shared by all – by travelers stuck in line to pass through airport security, by parents who must buy transparent book bags for children to meet their schools' post-Columbine regulations, by householders who flee to the suburbs to escape the sound of gunfire, by ordinary people who live in fear that a despondent relative will obtain and use a gun. And, of course, none of us is entirely safe from becoming a victim.

The goal is thus to document how gun violence reduces the quality of life for everyone. Recasting the problem in this way will, we hope, take us past symbolic politics to a direct engagement with the costs and benefits of alternative policies to cope with the problem.

THE LESSONS OF LITTLETON

Public awareness and concern about gun violence has been more influenced by the shooting of 35 people at Columbine High School in Littleton, Colo. in April 1999 than by the 150,000-plus shootings that have occurred in America since then. While Littleton was a unique event in many ways, the tragedy highlights several lessons that are important for understanding the problem of gun violence.

First is the key role of technology. There have been endless commentaries on what could have driven Eric Harris and Dylan Klebold, sons of prosperous families with seemingly bright futures, to plan and execute the attack. Explanations range from the sterility of life in upscale subdivisions, to violent fantasies encouraged by television and computer games, to general societal permissiveness.

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Whatever the merits of these perspectives, one feature of the attack cannot be ignored: Harris and Klebold, like other high school killers in the recent past, used guns to accomplish their grim task.

Of course, guns are not necessary to perpetrate violence, whether in schools or homes, or on the street; knives, fists and clubs are far more common weapons. The importance of guns in routine fights and robberies is that they intensify violence, increasing the likelihood of death. Because guns increase the scope and lethal potential of violence, the public has a powerful interest in keeping them out of violent encounters. This goal is distinct from the goal of reducing overall violence rates. Successful gun-oriented policies, would save lives even if assault and robbery rates stayed at current levels.

A second lesson is that the consequences of Littleton and the other school shootings extend well beyond the injuries and loss of life. These tragedies created a new arena for worry, a violent scenario that parents and principals everywhere could not ignore.

Third, efforts to repair the damage to peace of mind do not come cheap. The investments intended to prevent subsequent shootings have added greatly to the costs of the shootings themselves. That is, in assessing the comprehensive costs of gun violence, we must include the direct burden created by the threat and the indirect burden on parents and children who are complying with new rules – not to mention the taxpayers who are paying for the extra protection.

Fourth, it's possible to err on the side of too much protection in the costly pursuit of safety. While many schools responded to the Littleton shootings by changing their security practices, others rejected the use of metal detectors and similar measures as an affront to educational openness. One school superintendent in Massachusetts said, "We don't want to create an image of a police state, and we don't want dogs sniffing around." And the Los Angeles public schools decided against screening every student because of the loss of class time that would result.

Systematic evaluation of policies to reduce gun violence thus requires that the costs on both sides be weighed and compared, and that requires that they be quantified. The usual approaches to this task are, unfortunately, not of much use.

QUANTIFYING VICTIMIZATION

To the extent that data rather than rhetoric are brought to bear in public discourse on gun problems, they consist of counts of injuries and deaths, rather than broader measures of effects on society and the quality of life. Of course, the immediate damage that guns do in assaults, homicides, unintentional shootings and suicides – incidents that have caused more than a million deaths since 1965 and about three times that number of injuries – cannot be denied. And it does seem relevant to know something about the characteristics of these myriad victims.

In recent years, some 30,000 people were shot and killed annually in suicides, accidents and homicides, and another 80,000 suffered non-fatal injuries. The victims were concentrated among young Latinos and, especially, among African-Americans. For example, in 1997, the gun homicide rate for Latino men ages 18 to 29 equaled 38.5 per 100,000, around seven times the rate for white men of the same age. The gun homicide rate for black men 18 to 29 was an astonishing 134 per 100,000, some 25 times the rate for whites. Homicide patterns for women are qualitatively similar, but at much lower levels since about 80 percent of all homicide victims are male.

It is of interest to know how much of those

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large differences by race and ethnicity can be accounted for by group differences in socioeconomic status. Blacks are less likely to be married and more likely to be school dropouts, categories that are associated with higher risk of victimization from gun violence. But, as it turns out, the race divide is large even when we limit the comparison to those who are similarly situated in socioeconomic terms: among married male high school graduates age 18 to 29, for example, the victimization rates were 2.6 per 100,000 (whites), 16.1 (Latinos), and 75.8 (African-Americans).

In addition to the demographic factors explored here, criminal involvement is a major risk factor for homicide victimization. A study of all homicide victims ages 21 and younger in Boston between 1990 and 1994 found that three-quarters had prior criminal records. From another study we learn that, in Philadelphia, the percentage of gun homicide victims with prior criminal records increased from 73 percent in 1985 to a remarkable 93 percent in 1996.

Suicide patterns are similar to homicide with respect to sex, but not to race or age. Indeed, suicide rates are highest among the elderly white population. While women attempt suicide about three times as often as men do, suicide fatalities among men outnumber those for women by four to one, and the gap is still larger for successful gun suicide. As in the case for homicide, marriage and education appear to have some protective effect. But the most important correlate of suicide appears to be mental illness: more than 90 percent of suicide victims suffer from some mental disorder. The illnesses most likely to be associated with suicide include mood or personality disorders, schizophrenia, alcoholism and drug abuse. Our own analysis of the data suggests that physical health problems also elevate suicide risk.

In recent years, some 30,000 people were shot and killed annually in suicides, accidents, and homicides; another 80,000 suffered non-fatal injuries.

To some, the much higher risk of gunshot injury among poor, less-educated people who are mentally ill or involved in crime is another manifestation of persistent inequities in the current social order. For them, the socioeconomic correlates of gun violence strengthen the case for action. To others, these same victimization statistics lead to the opposite conclusion – namely, that gun violence is not much of a problem for the average American. The cynical assessment of the situation by Jeff Cooper, a member of the National Rifle Association's board, represents an extreme version of this view: "The consensus is that no more than 5 to 10 people in 100 who die by gunfire in Los Angeles are any loss to society. These people [the other 95 percent] fight small wars among themselves. It would seem a valid social service to keep them well-supplied with ammunition."

Our sympathies lie with efforts to reduce poverty and divert young people from risky behaviors, rather than with ammunition subsidies for at-risk young men. But Jeff Cooper's opinion serves as a stark illustration that the victimization statistics do not provide a com-

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pelling measure of the scope of the gun-violence problem.

PRODUCTIVITY LOSSES AND MEDICAL COSTS

An alternative to simply counting the number of victims is to estimate the loss in economic output associated with injuries and deaths. The conventional approach utilizes the cost of illness (COI) accounting framework, which specifies that total costs are the sum of direct costs (primarily medical treatment) and indirect costs (the reduced productivity of victims). Unfortunately this method gets us no closer to understanding or quantifying the true burden of gun violence.

The cost-of-illness approach has a long history. The first such analysis was published in the early 1950s, and more than 200 such studies had been published by 1980. Even today, this approach continues to be quite influential in public discussion of medical priorities, despite widespread criticism by economists. At root, the COI framework is based on the mistaken assumption that human welfare can be measured by the size of the economic pie (or what's left over after medical expenses). The problem with this framework is that in a liberal society, we measure human welfare not by the sum of production, but rather by the well-being of its members. The value of a person's life and health is thus not measured by productivity in the labor market, but by the value of life to the individual as reflected by his or her willingness to accept a greater risk of death in return for income. And the amount people are willing to sacrifice to reduce the risk of gun violence does not bear much relationship to their earnings.

Without recounting this debate in full, we simply note that the cost-of-illness approach does not even work on its own terms, in that its practitioners typically compute *gross* losses when what they seem to want are *net* losses. For example, the effect of gun injuries on the nation's total output is not well measured by the loss of the victims' contribution (the gross measure) if the victims are easily replaced by immigrants. If the flow of immigrants is largely governed by the availability of jobs in this country – as it surely is – then we would expect a negligible loss in national output when someone is shot.

Calculating the net effects of gun violence on the nation's medical bill is more complicated. We estimate that the 113,000 people wounded by guns in 1997 will ultimately require $1.9 billion worth of treatment. But calculating the net effect of gun violence on the nation's annual trillion-dollar medical bill requires assumptions about what medical spending *would have been* under the scenario in which gun misuse were eliminated. In some circumstances, it would actually have been higher – as much as $500 million higher annually for suicide victims, since many of them incur above-average medical expenses before they decide to shoot themselves.

This grim accounting does not mean that gun suicides make society better off – such a judgment would imply a strange value system that emphasized the minimization of medical spending over all other considerations. In fact, our finding that gun suicides may save money for the medical system is evidence that medical costs poorly measure the real burden that gun violence imposes on society. The same is true for productivity losses. Thus, the cost-of-illness approach provides little insight into the true magnitude of the social costs of gunshot injury.

THE ECONOMIC APPROACH

The economic framework that we use redirects attention to a broader accounting of

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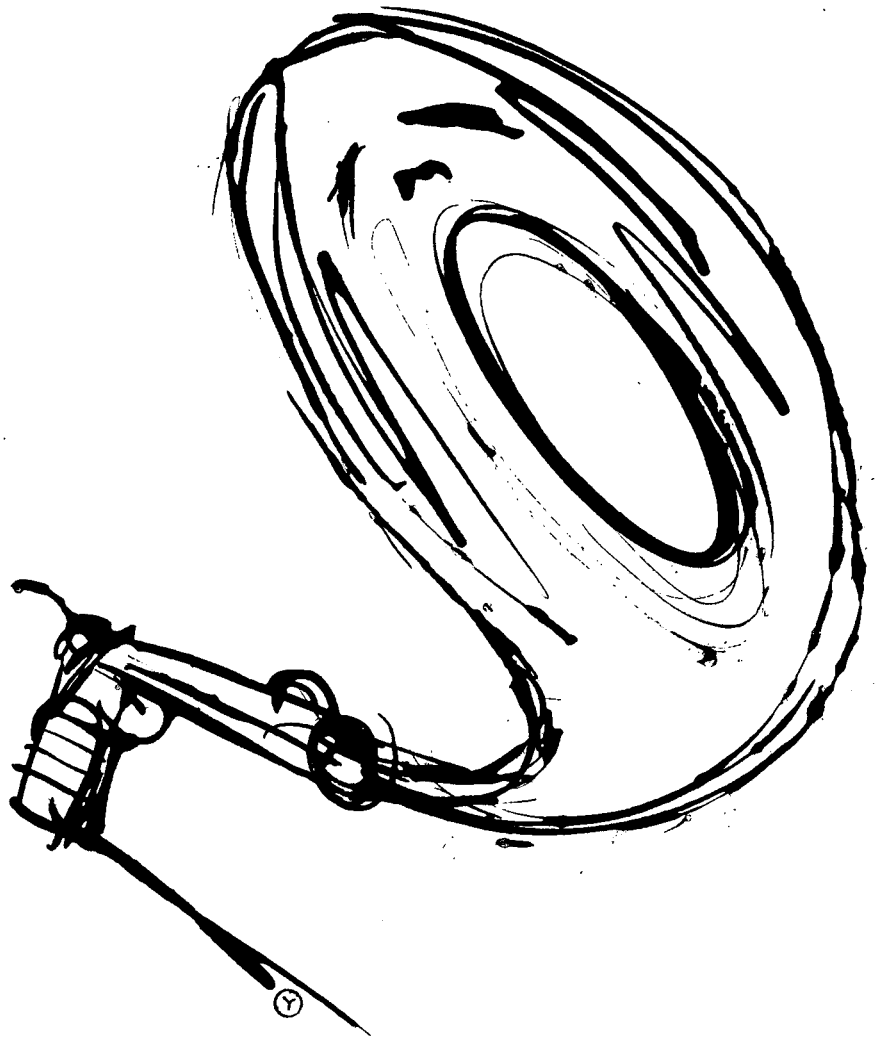

how the public perceives the gun-violence threat, and to the costly efforts to minimize that threat. It is directly relevant to the policy process, in the sense that public decisions about how much to invest in reducing gunshot injuries are logically oriented toward the future and valued accordingly. And it takes account of the full array of consequences associated with the threat of gun violence.

In considering what should count, imagine a fanciful thought experiment in which a vaccine were developed that immunized the population from gunshot injury. What would be the value of such a vaccine? For guidance, it is helpful to turn to a real-life example where a vaccine actually eliminated a public health threat – polio.

Before an effective vaccine was developed, parents lived in fear their children would be stricken with polio. By the time of the Great Depression, it was perhaps the most feared disease known to Americans. There was no cure, and it crippled or killed many of its victims. According to one account, "all across America in the late 1940s and early 1950s, polio changed the face of childhood. Families fled the cities, swimming pools were closed, mothers fretted that an innocent frolic in a neighborhood creek could paralyze their child for life." The polio epidemic peaked in

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1952, with 58,000 new cases; between 1947 and 1959, 17,000 died and hundreds of thousands were disabled.

With the introduction of the Salk vaccine in 1955, and the more-effective oral Sabine vaccine in 1961, polio was quickly eliminated. There has not been a naturally occurring case in the United States since 1979. The savings to society from this miracle include the costs avoided from acute and long-term medical care of victims, the suffering of victims and their families, and the lost productivity of those who died young or were permanently disabled. But the savings were not limited to the costs associated with suffering the disease – also important was the elimination of any need for families and public agencies to take precautions, or even to worry that someone they cared about being stricken. In sum, the total cost to American society of living with polio included both the consequences for victims and the preventive measures taken by parents, schools and other agencies.

The analogy to gun violence is clear. While it is hard to imagine a vaccine that would erase gunshot wounds as a threat to the public health, suspend disbelief for a moment. The savings would include, as in the case of polio, reductions in the costs stemming both from victimization and from the necessity of guarding against being shot or investing in gun-violence-prevention measures – or even for worrying about the possibility of becoming a gunshot victim. More formally, the total cost of the current volume of gun violence is equal to the costs stemming from gunshot injuries plus the costs of all the efforts to deter shootings or protect against them.

Our shorthand for these distinct categories will be victimization costs and prevention costs. As in the case of the Sabine vaccine, an intervention that eliminated gun violence would have benefits equal to these total costs.

The total cost of the current volume of gun violence is equal to the costs stemming from gunshot woundings, plus the costs of all the efforts to deter shootings or protect against them.

In practice, we don't expect such miracles. Gun violence has always been a part of life in America, and the best we can hope for is to reduce this threat. Even so, both types of costs remain relevant. A successful policy that reduced gun violence would presumably reduce both sorts of costs. Victimization costs would, of course, fall with a reduction in victims. And a reduction in the threat level would also reduce the need for prevention efforts.

The savings would come in a reduced homicide caseload in the criminal-justice system, in a revival of neighborhoods devastated by violence, and in the emotional relief to parents who were less worried about their children's safety. How the victimization and prevention costs tend to relate to the objective threat level is somewhat unclear. When there is no threat, those costs are zero – but do they increase in proportion to the threat? Some prevention activities have an all-or-nothing quality, such as moving to the suburbs or requiring that all building entrants pass

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through a magnetometer. The psychology of risk also tends to introduce non-proportional effects in victimization: low-probability events tend to be either excessively weighted in subjective calculations of risk, or ignored entirely. As a result, it may be that there would be some disproportionate added benefit to the total elimination of gunshot violence.

The Costs of Victimization

Placing a monetary value on life is anathema to some humanists, who believe that it is priceless. But in everyday life, it's inescapably true that reducing threats to life and limb must contend with other goals: scarce resources dictate a sort of quality-quantity trade-off. Government, for example, routinely assigns a value to life in making highway-design decisions, and information of this sort is increasingly taken into account in regulatory decisions about environmental protection. In the private sector, product design is one arena where safety and economy may conflict – as in the recent controversy over just how many of its putatively defective tires Bridgestone should replace, and on what schedule.

Indeed, we all make implicit judgments about the value of our own lives and those of our family when we decide whether it's worth the extra money to buy additional safety features in motor vehicles, tools, bicycle helmets and so forth. Should we purchase the smoke detector that only signals fast-flaming fires, or spend more to get one that also has the capability to detect smoldering fires? And, while we're at it, what about installing a carbon-monoxide detector?

To be precise: such decisions entail a judgment, not about the value of a particular life, but about the value of a small increase in the probability of death. The renowned economist Thomas Schelling argued that the issue isn't about preventing a particular death, but a statistical death. If a million people are each willing to spend $5 on a device that will reduce the probability of death for each of them by one millionth, the total of $5 million expended saves one life on the average. From that, one can conclude that a "statistical life" is worth $5 million.

Now, $5 million may be more than any one of them would or could pay to avoid certain death. But this ransom value of an *identified* life is not our concern: The public's willingness to pay for added amounts for safety is what's relevant for valuing safety-enhancement programs like those aimed at reducing gun violence. After all, when such programs are undertaken, no one knows which lives will be saved. Instead, the service provided by the safety program is that a large number of people enjoy a small reduction in risk.

Concern about Others. The public concern about gun violence has much to do with the safety of loved ones, neighbors, classmates, members of the same church or temple, public figures who may become targets, and others who have enough of a personal connection that their death or injury would have emotional impact. Mutual concern enhances the value of creating a safer community.

The importance of these interpersonal concerns has the effect of further removing the valuation problem from the objective to the subjective arena. A community that is closely related by kinship and friendship would place a higher value on eliminating a given threat than would an equally wealthy community of strangers. Suppose 100 members of a college sorority were asked:

- How much are you willing to pay to avoid a 1 percent chance of being shot tomorrow?

or

- How much are you willing to pay to avoid one member of your sorority being selected at random and shot tomorrow?

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While the two questions pose the same personal risk to each individual, the second broadens the field of concern and, we would argue, is likely to yield a higher number.

Sentiment is not the only reason gunshot injuries may be a community problem. The injuries avoided from implementing a safety-enhancing program may affect the material standard of living, as well as the level of safety. And to the extent that the safety-enhancing program affects productivity, it has financial implications that go beyond the value of risk reduction. For a life saved or injury averted, the community gains whatever the individual produces over his or her remaining lifetime, as well as the medical costs associated with that injury. From the community's perspective, of course, one must subtract the individual's own consumption. Whether on balance the difference is positive or negative will depend on circumstances and behavior.

The question here is whether we have a stake in the continued life and health of a stranger – whether that stranger will contribute more than she takes during her remaining years, in the sense of having what we call a positive public savings rate. She might run a deficit by this standard because she is receiving non-wage income (pensions, income from investments) or spending down her assets, or using more medical care than she pays for through insurance premiums and taxes.

To this calculation of net contribution to the community's assets we would add an accounting of contributions she would make outside the marketplace. That would logically include both positive and negative contributions: raising kids and performing volunteer work (presumably a plus), or criminal predation and unsafe driving on the negative side. The monetary equivalents of such non-market services should be combined with the net financial consequence to get the bottom line.

While estimating the value of all such services seems a daunting task, it may not be that important in practice; it's unlikely that we have a tangible stake in the continued existence of strangers. Outside of concern about our own life chances as well as those of friends and loved ones, it might make little difference to our quality of life if the death rate were reduced a bit across the board. Only if the change in death rate is not uniform – if, for example, those who tend to produce more than they consume are especially cursed by gun violence – is the impact on the standard of living likely to be too large to ignore.

Suffice it to say, the greatest value of increased safety is not found in these sorts of calculations about net savings, but rather in our direct concern for our own personal safety, and the safety of family and friends, and perhaps others in the community. The value in this case is largely subjective. If we enjoy life, then we place value on anything that will increase the chance that we will go on living and avoid pain and disability. And the continued life and health of our family and friends is vital to our continued enjoyment. It may be unpleasant to contemplate placing a monetary value on this sentiment, but it is implicit in day-to-day decisions that we already make.

The Costs of Prevention

Recall that the total costs of gun violence include both the costs of actual victimization (however computed) and the costs of preventing and defending against this type of violence. Thus, one major source of savings from gun controls would be to reduce the need for individuals, firms or government agencies to adapt their behavior to account for the gun threat. Yet the value of these prevention costs has largely been ignored in previous studies of the costs of gun violence.

Consider, for example, the costs of gun

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violence with respect to the President of the United States. In the victim-cost sense, this cost has been zero. There have been no shootings since 1981, when John Hinkley wounded President Reagan. But the threat of gun violence has forced every president to limit the ways in which he engages with the public, and the Secret Service has spent millions of dollars securing against assassination attempts when the President does choose to go out in public. Of course, this vigilance is not just a response to the threat of guns. But other weapons are less likely to pose a real threat; every president who has been wounded or killed in an assassination attempt was shot.

We have not been able to develop a comprehensive estimate of the public costs of gun violence-prevention activities, but it clearly is many billions of dollars annually. We note, just for example, such costly matters as screening entrants to schools and other public buildings; equipping police with Kevlar vests; prosecuting and punishing murderers (who in the absence of guns would most likely be accused of nothing more than attempted murder), and protecting public officials from assassination.

Private Prevention Costs. Preventive government expenditures are only part of the story, since almost every American is affected in some way by the threat of gun violence.

The costs associated with the exodus of business and the middle class to the suburbs seem so commonplace (and so inevitable) that they are taken for granted. But these costs are large – think about the increases in traffic congestion and commute times, or the deterioration in the economic and social viability of many urban neighborhoods. And one contributing factor is surely the gun violence concentrated in central cities.

Julie Berry Cullen at the University of Michigan and Steve Levitt at the University of Chicago found that increases in property crimes and violent crimes do, on balance, reduce city populations. Their finding suggests either that the value of local disamenities – i.e., the chances of getting shot – are not fully reflected in lower housing prices or that the costs of maintaining habitable properties establish minimum rent levels at which properties will remain viable. Since homicides lead to substantially more urban flight than other violent crimes do, and since guns increase the probability that violent crimes result in homicide, the use of guns in crime have certainly contributed to urban flight.

If we enjoy life, then we place value on anything that will increase the chance that we will go on living and avoid pain and disability.

Gun violence also imposes costs on society by causing families to stay inside or to avoid particular neighborhoods, thereby reducing the overall quality of communal life. Consider the extreme case of Washington Heights, a neighborhood in New York City where for years many residents were afraid to venture outside because of the threat of gunfire. One police officer assigned to the area reported that, "We found people who lived across the street from each other for 25 years and had never seen each other." According to one resi-

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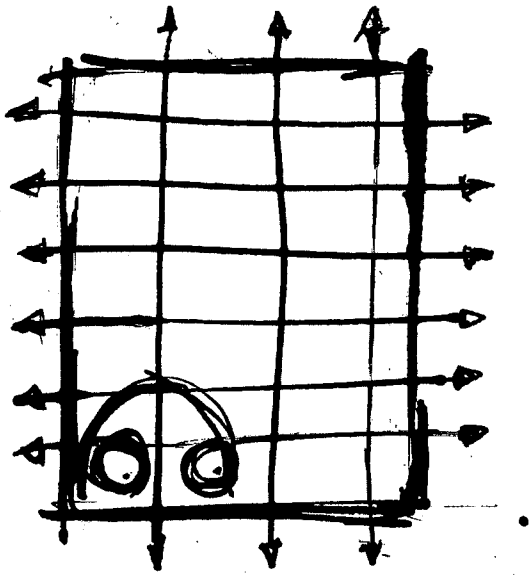

dent, "We were hibernating like bears." Another remarked "I've got to get over my fear. It controls you. It does not allow you to be. It makes you feel like a prisoner when you have not committed a crime."

Even those who live outside of areas with high rates of gun violence may suffer a reduction in their quality of life if the threat of gunshot injury prevents them from taking advantage of the amenities offered by the big city. Similarly, gun violence may affect the number of people who visit cities as tourists, which in turn affects economic activity and government revenues. When nine foreign tourists were shot in Miami in 1992 and 1993, one company reported that the number of Florida tourist packages sold to Europeans plummeted by 80 percent. These reductions impose real costs on a state whose tourism business runs to $30 billion annually.

WILLINGNESS-TO-PAY TO REDUCE GUN VIOLENCE

The burden of gun violence is thus most appropriately defined as what society would be willing to pay to reduce or eliminate gun-

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shot injuries, given the attendant reductions in victimization and prevention costs. While almost all economists accept the willingness-to-pay framework in principle, in practice this conceptual approach must be adapted to the limitations of available data.

Marketplace Behavior. A common way to calculate the value of lives saved is to base estimates on preferences derived from prices in the marketplace. For example, a widely used approach is to examine the extra compensation workers demand in order to take risky jobs. Another is to see what consumers will pay for, say, air bags or smoke detectors. A huge body of research over the last few decades places the value of one statistical life at between $3.75 million and $8.75 million.

These market-based studies can provide useful information if consumers and workers have accurate information about the health risks associated with different jobs, houses and other consumer products. Of course, if workers are misinformed about the risks of a particular job, then the risk premium will misrepresent those preferences.

In practice, it's a difficult statistical problem to tease out the effects of health risks from all the other influences on the wage structure. Jobs that carry higher risks of death (for example, construction work) may have other features that will also affect the attractiveness of this work (such as exposure to the elements and hard physical labor), hence affecting the supply of labor and ultimately the wage for this occupation. Similar problems can arise in studies that relate variation in health risks to the price of homes or other consumer goods.

Since there is little information available on how wages or other prices respond to the risk of gunshot injury, the leading study on this subject (by two economists, Ted Miller and Mark Cohen) relied on wage-risk estimates taken from other contexts. There are reasons to question the application of this approach to the case of gun violence. As we have seen, the victims of gun violence are not representative of the United States population in general. Even studies that focus on workers in dangerous occupations, who presumably have less aversion to risk, may overstate the value of risk reductions to those at greatest danger of gunshot injury. Studies of the extra wages paid on jobs associated with an increased probability of death also provide little information about the costs associated with *non-fatal* gunshot wounds, which constitute the majority of all injuries. In principle, one could estimate these costs from studies of the relationship between wages and risks of workplace injuries. But gunshot wounds are different from job-related injuries in a number of important respects.

An alternative approach for valuing nonfatal injuries is to use data from jury awards in liability suits by gunshot victims, although

Gun violence also imposes costs on society by causing families to stay inside or to avoid particular neighborhoods, thereby reducing the overall quality of communal life.

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the sample of personal-injury cases that actually reach trial is likely to be unrepresentative. Moreover, the principle that underlies jury awards to victims bears no clear relation to the willingness-to-pay standard that we think is appropriate here.

More important, the payment that people require in order to be induced to accept riskier jobs only captures the value of improvements in personal safety. Wage-risk estimates exclude some of the most important benefits from reducing gun violence, such as a diminished risk of injury to loved ones and reduced need for caution in everyday life.

Wage-risk estimates exclude some of the most important benefits from reducing gun violence, such as a diminished risk of injury to loved ones and reduced need for caution in everyday life.

The Contingent Valuation Method. The most straightforward way to determine what people will pay to reduce gun violence is to ask them. The notion of constructing hypothetical scenarios to elicit people's preferences toward risk (known as the contingent valuation, or CV, method) dates back to a famous essay by the aforementioned Thomas Schelling. His suggestion is at odds with the intuition of most economists, who believe that people's behavior is a better guide to how they value things than their responses to survey questions. Nonetheless, Schelling was eloquent in his own defense:

> *It is sometimes argued that asking people is a poor way to find out [about their preferences], because they have no incentive to tell the truth. That is an important point, but hardly decisive. It is also argued, and validly, that people are poor at answering hypothetical questions, especially about important events – that the mood and motive of actual choice are hard to simulate. While this argument casts suspicions on what one finds out by asking questions, it casts suspicion, too, on those market decisions that involve remote and improbable events. Unexpected death has a hypothetical quality whether it is merely talked about or money is being spent to prevent it....*

As with studies of wage-risk tradeoffs, contingent valuation studies are only reliable if respondents understand the baseline risks and how they are changed by a particular intervention. In studies of wage-risk tradeoffs, economists typically assume that people will seek out information about health risks on their own, since they have strong incentives to do so. With CV studies that examine unusual health risks to which most people are not exposed, the only information respondents are likely to have about the nature of the risk is that provided to them as part of the survey. This concern should be less of an issue with our study of gun violence, since the threat of gunshot injury affects people's everyday behavior – for example, decisions about where to live, and when and where to work.

Contingent-valuation researchers must also hope that respondents provide thought-

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ful answers to survey questions about the health risk in question. Economists are typically less concerned with what motivates actual consumer decisions in the marketplace, since people have incentives to devote at least some reflection to their decisions – it's their money, after all. To maximize the chance that respondents take the contingent-valuation questions seriously, good studies make the hypothetical market scenario as realistic as possible and precede the CV segment with a series of questions that get the respondent thinking about the general subject. But there's no guarantee these efforts will be successful.

Another potential problem arises from the well-known tendency of survey respondents to present themselves favorably to interviewers. Since most CV surveys ask about things that people would deem to be socially desirable – whales, open meadows, healthy children – respondents may report they would pay to support these good causes, even if they would refuse to pay in a real-life situation.

A similar problem comes from the desire to answer in ways that respondents think are socially desirable – that answers are motivated more by a desire to purchase moral satisfaction than a defined quantity of a specific public good. A good example: people may be willing to pay the same amount to save five thousand seals as five million, since the satisfaction comes from the abstract act of saving lovable mammals.

For all its problems, though, contingent valuation seems to be at least as useful as extrapolations from studies of marketplace behavior and jury awards. While studies of workplace behavior have the advantage of relying on actual rather than hypothetical behavior, contingent-valuation estimates are in principle more complete since they include both tangible and intangible costs that respondents are willing to pay to eliminate.

Willingness-To-Pay Estimates. Our study is based on a nationally representative telephone survey of 1,204 American adults in 1998 conducted by the National Opinion Research Center at the University of Chicago. After a series of questions about their attitudes towards government and various current or proposed gun regulations, respondents were asked:

> *Suppose that you were asked to vote for or against a new program in your state to reduce gun thefts and illegal gun dealers. This program would make it more difficult for criminals and delinquents to obtain guns. It would reduce gun injuries by about 30 percent, but taxes would have to be increased to pay for it. If it would cost you an extra [$50 / $100 / $200] in annual taxes, would you vote for or against this new program?*

Answers for each of the three dollar amounts are available from one-third of the sample. Note that respondents were asked to report on the willingness to pay to finance a program that decreases gun availability to proscribed groups at high risk of misusing firearms, while having little effect on access to guns by ordinary citizens. Previous research suggests that gun availability within an area increases the lethality – but not the volume – of violent crime. As a result, the implicit counterfactual that we had in mind was a reduction in assault-related gunshot injuries by 30 percent, an equivalent increase in non-gun crimes, and no change in the number of defensive gun uses by law-abiding citizens.

We also assume that respondents are reporting on the total dollar value that their *households* would be willing to pay, rather than the value that they themselves would pay. Our assumption is thus quite conservative, since reality probably lies somewhere

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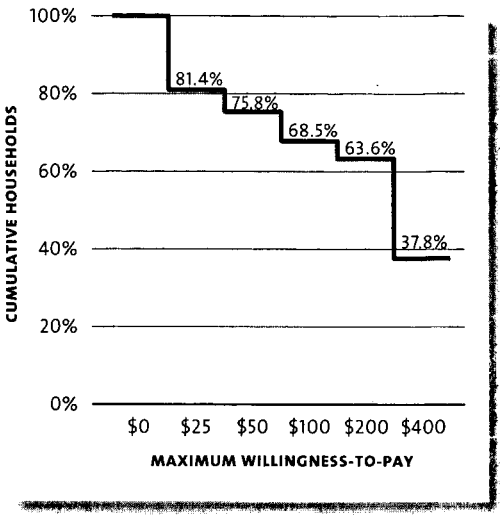
in the middle.

The accompanying graph shows the proportion of people willing to support the program at different prices implied by these descriptive statistics. This figure is not unlike a demand curve, in the sense that it shows the proportion of households willing to purchase a 30 percent reduction in gun assaults at each possible price.

The area under the curve, multiplied by the 99.6 million households in the United States, totals $21.2 billion. Put another way, the survey results suggest that the American public would apparently be willing to pay $21.2 billion to reduce assault-related gunshot injuries by 30 percent. These estimates are what economists call "non-parametric" in the sense that they impose almost no assumptions on how willingness-to-pay is distributed across households.

In addition to an estimate for the total value of reducing gun assaults, we are interested in obtaining an estimate for willingness-to-pay per gunshot injury avoided. We divide the total WTP by the estimated annual incidence of assault-related gunshot wounds (77,923 in 1997) multiplied by 30 percent. On average, Americans say they are willing to pay about $900,000 to avoid one gunshot injury. An alternative estimate of willingness-to-pay derived from the same data and a different statistical estimation method does not change the conclusions much: households appear willing to pay about $860,000 per injury avoided, or about $20 billion to reduce total gunshot injuries by 30 percent, nationwide. If a 30 percent reduction in gun assaults also leads to a 30 percent reduction in preventive expenditures, our estimates imply that eliminating gun use in assault would be worth nearly $80 billion.

What the Estimates Mean. One worry here is that responses are insensitive to the quanti-



SOURCE: National Opinion Research Center, University of Chicago 1998

ty of gun injury reduction offered. That is, if what people are paying for is the chance to do something about gun violence, the numbers won't say much about the benefit of reducing injuries by, say, 1,000 as opposed to 10,000. In fact, there is indirect evidence that the people responding were aware of the distinction. In the survey, willingness-to-pay increases with the number of children in the home, which in turn is related to the total amount of risk reduction that the household gains from a violence-reduction program. We found that each additional child in the home under the age of 6 increases the respondent's willingness-to-pay by 50 percent, and each additional child between 6 and 17 increases WTP by 25 percent.

A larger concern is that the quality of the data is limited by the constraints of telephone-survey methods; respondents are only willing to stay on the phone for so long, and questions must be simple enough so that they can be easily followed in a casual conversation. For example, the questions do not specify where the interventions would be targeted, and thus who would benefit from the pro-

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gram. And what society would pay to reduce gun injuries to elementary school children may be different from what it would pay to reduce the number of gang members shot.

A useful check is to compare what the average household will pay to reduce gun violence by 30 percent (between $200 and $240 per year) with what the average household currently pays to avoid being victimized by criminals. Calculations by another economist, David Anderson, suggest that each year the American public devotes $174.6 billion – $1,800 per year per household – to reduce the risk of criminal victimization through spending on the criminal justice system and on private protective measures like home-security systems. Thus, it does not seem implausible that the average household would spend $200 more per year to reduce the risk of gun violence by 30 percent.

Who Pays. The contingent-valuation estimates presented here suggest that the American public would pay on the order of $80 billion per year or more to eliminate the use of guns in violent crimes. While our estimates are hardly precise, they do clearly demonstrate that the costs of gun violence to society are orders of magnitude larger than tangible costs like hospitalization.

Another striking finding is that the costs of gun violence are distributed far more evenly than the victimization statistics would imply. As noted earlier, gun assaults are strongly concentrated among low-income young men. Yet our survey suggests that the amount households would pay to reduce the volume of gun assaults in America *increases* with family income, even though higher-income families are at lower risk of injury.

If support for efforts to reduce gun violence were motivated purely by concern about personal safety, we would have expected the public's willingness to pay to be far less than the $900,000 the survey indicated they were willing to pay. After all, those at relatively high risk of being injured apparently do not put a high value on reductions in these risks. For example, Steve Levitt, an economist, and Sudhir Venkatesh, a sociologist, estimated that the risks taken by members of a crack-dealing street gang suggest they value their lives at just $55,000. On the other hand, the people who place a relatively high value on improvements in their own safety are at relatively low risk. This implies that a large share of the costs of gun violence stem from interdependencies among people: most are at low risk of gunshot injury themselves, but suffer real costs when people within their social network are shot.

Because the survey only asked respondents about their willingness to pay to reduce gun use in crime, we cannot estimate the value of reductions in unintentional shootings or suicides. We think about willingness to pay in this context as the value of some intervention that reduces one's risk of impulsive injury in the future. Using data from workplace studies and jury awards for the value per statistical life and nonfatal injury, we estimate that the elimination of unintentional shootings and gun suicides in 1997 would be worth as much as $20 billion. Taken together, then, the best available evidence suggests that the costs of gun violence in America are on the order of $100 billion per year. Since these estimates probably understate the reductions in costly averting behaviors that would occur with a complete elimination of gunshot injuries, the full costs of gun violence may be larger still.

REMEDIES

The problem of gun violence in America is enormous, but not hopeless.

Perhaps the least-controversial fix has been to deter gun use in crime through the

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threat of harsher penalties. In most states, a robber who uses a gun is subject to a longer prison sentence than one who doesn't. More controversial by far have been policies that fall under the gun control rubric – policies that limit who may legally acquire certain kinds of guns and ammunition. A third approach is to limit the more dangerous uses of guns – particularly the practice of carrying a gun in public.

All of these approaches may have the potential of reducing gun violence and hence the homicide rate. Research on the effectiveness of such policies is not as strong as we might like, but there is still something to learn from a close look.

Regulating Gun Access

As we have noted, guns are more lethal than other weapons used to commit crimes, and as a result, a decrease in the share of crimes committed with guns will save lives. That explains why the heart of the policy response to gun violence should focus on restricting gun supply, thereby making it more difficult, time-consuming or costly for a violent individual to obtain one.

Current efforts to regulate gun acquisitions center on prohibitions against sales by federally licensed firearm dealers to people prohibited from owning guns – teenagers, convicted felons, fugitives from justice and those with serious mental illnesses. There are ways around these prohibitions and restrictions, and as a result, the change in the effective price of illegal possession is likely to be modest. One concern about supply-side strategies is that they only apply to sales by licensed firearm dealers. Secondary-market sales, which account for around 30 to 40 percent of all gun transfers each year, are not regulated.

The seller in these cases may be an uncle or a next-door neighbor, but may also be a professional trafficker or an acquaintance who makes a straw purchase from a licensed dealer for someone who can't pass the background check. While many secondary-market transactions are innocent, teens and felons obtain most of their guns in this market.

Nonetheless, regulation of primary-market sales has some potential to affect proscribed individuals. First, many of these buyers are forced into the secondary market, where the price of guns is often higher. The secondary market is also less convenient and entails greater risks – a gun purchased from a stranger may be damaged or may have been used previously to commit a homicide.

Second, the influx of additional buyers into the secondary market caused by primary-market regulation should increase the price of guns in the secondary market unless supply is perfectly elastic. This price increase should lead to further reductions in gun ownership by high-risk groups.

Third, reducing the flow of guns from the primary to the secondary market may also increase the price of guns in the secondary market. Three states now restrict handgun sales to no more that one per customer per month, making life more difficult for illicit traffickers. Doug Weil and Rebecca Knox found that the proportion of guns used in crimes in the Northeast that are traced to dealers in Virginia decreased by 30 percent after implementation of that state's one-gun-a-month law.

Any change in the effective price to high-risk people should reduce gun ownership so long as at least some potential buyers are sensitive to the cost of acquiring and keeping firearms. And the anecdotal evidence supports the notion that the demand for guns by high-risk groups is indeed price-sensitive. In a survey of incarcerated juveniles in North

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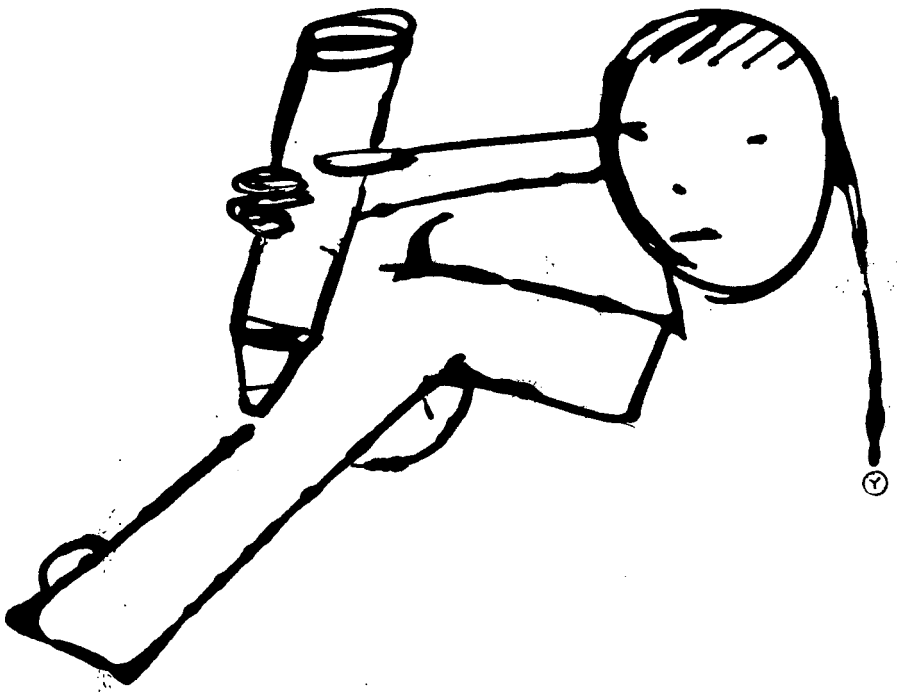

Carolina, one teen reported that "when [people] are short on money, they have no choice but to sell" their guns, while another remarked that he had "traded a .22 for a Super Nintendo and some other guns for a VCR and for my waterbed." Similarly, in a survey of incarcerated felons who committed their crimes without guns, 17 percent reported cost as a somewhat or very important consideration in deciding not to use guns. Thus, while highly motivated teens and criminals may not be deterred from acquiring guns, raising the price to proscribed groups should reduce gun ownership.

A final group of high-risk individuals who may be deterred by primary-market regulations are those who have only a passing impulse to misuse a gun. The 1994 Brady Act required a five-day waiting period for all handgun sales. That provision expired in 1998, but waiting periods still exist in many states.

None of these policies are likely to have a substantial effect on law-abiding adults' access to guns for recreation or protection. So even if primary-market regulations achieved only modest reductions in the homicide and suicide rates, the value of the lives saved might well be sufficient to compensate for the modest burden regulation imposed on legal gun users.

Primary-Market Regulations. Consider three approaches that have been evaluated by researchers.

A study of gun buyers in California by Mona Wright, Garen Wintemute and Frederick Rivara suggests that background checks make a modest difference. Wright and her colleagues compared Californians who tried to purchase a handgun in 1977 but were rejected because of prior felony convictions, with those who had a prior felony arrest but were allowed to purchase because they had not been convicted.

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The rejected group had more serious criminal records on average, and hence would be expected to be a greater threat. But Wright found that, during the first three years after the purchase attempts, the arrested-only group had 21 percent more gun arrests and 24 percent more violent-crime arrests than those denied purchase. It thus appears that the denial had some effect on felons' ability to acquire guns. Still, the effect of these denials on gun injuries appears to be relatively small, since the convicted felons who obtain guns from licensed dealers have relatively low rates of criminal involvement.

Note, however, that Wright provides no indication of how the background-screening requirement affects felons and other proscribed groups who do not attempt to purchase guns from dealers. Some evidence on the overall effects of such policies comes from an evaluation of the 1994 Brady Law, which required background checks and a five-day waiting period for all handgun sales by licensed gun dealers in the 32 states that did not already have such provisions in place. A comparison of homicide trends in Brady and Brady-exempt states found little or no difference.

A more extreme example of primary-market regulation is the 1976 ban on the purchase, sale, transfer and possession of handguns in Washington, D.C. A comparable national ban is unlikely. Still, Washington's ban does offer insights into the effects of primary-market regulations, since it increases the price of guns to teens and convicted criminals by forcing them to use the secondary market or to drive to Virginia or Maryland to buy guns illegally from licensed dealers.

Gun homicides and suicides decreased by about 25 percent in the years following Washington's handgun ban. It's unclear, though, how much of this reduction to attribute to the ban. Colin Loftin, a criminologist, found that gun violence in Washington fell in comparison with gun violence in its suburbs. And though Loftin's choice of a control group has been criticized, comparisons with other jurisdictions reinforce his findings.

The city of Washington paid $100 per gun as part of its 1999 buy-back program, yet many of the guns that were turned in were estimated to have resale values of no more than $30.

The bottom line here is that the effects of primary-market gun regulation depend on the extent to which the secondary market in guns is regulated. And the current system leaves secondary-market sales largely untouched.

In 1999, President Clinton earmarked $15 million for a third way to make guns more expensive: buybacks. This federal program is inspired by a number of local initiatives that attempt to reduce supply by purchasing guns from private citizens on a no-questions-asked basis. Proponents are persuaded by evidence that gun ownership is a risk factor for suicide and unintentional fatal injuries, and thus hope to reduce the proportion of households

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that keep guns. While that may be true, the results are likely to be trivial in a country in which 40 million households own guns and four million new guns are added to this private inventory each year.

Gun buyback programs may also have unintended consequences. For example, Washington paid $100 per gun as part of its 1999 buyback program, yet many of the guns that were turned in were estimated to have resale values of no more than $30. And the payment presumably enabled at least some owners to upgrade to newer and more lethal firearms.

Gun Design. Presumably, everyone agrees that there should be some limits on the types of weapons that are made accessible to private individuals; few of us would want it to be possible for hobbyists to acquire, say, ground-to-air missiles. Accordingly, policy makers have implemented bans on particular guns or gun accessories because they are deemed to increase the lethality of gun misuse, yet are not crucial for sporting uses or self-defense. But the ultimate effect on crime of such bans depends in large part on the availability of functionally equivalent substitutes.

Federal restrictions on fully automatic machine guns, high-capacity magazines for semiautomatic firearms, and particular types of ammunition such as armor-piercing handgun shells should effectively raise the price of these technologies to criminals. Similarly, policy makers have long discussed the possibility of banning the small, cheap handguns known as Saturday Night Specials. If such bans eliminated the sale of all handguns with design features that are particularly useful for criminal activity – notably, short barrels that makes guns easily concealed and carried in public – then criminals would be forced to acquire such guns from the secondary market at a higher price.

One high-profile initiative, which was part of the Crime Control Act of 1994, forbids the manufacture and sale of a handful of semiautomatic firearms designated as assault weapons. The ban includes semiautomatic pistols and rifles with two or more of the following features: a bayonet lug, flash suppressor, protruding pistol grip, folding stock or threaded muzzle. Yet aside from aesthetic considerations, the banned guns were functionally equivalent to other semiautomatic weapons that were not banned. Thus, the net effect on the price of semiautomatic weapons with particular design features is negligible. While it is still too early to draw definitive conclusions about the effects of the ban, we expect them to be quite modest.

The notion that inherently dangerous consumer products can be made safer has been important within the public-health community since the time of Ralph Nader's efforts to improve automobile design in the 1960s. But such efforts have been more controversial for firearms.

Many of the proposed design changes would do little to alter the essential features of guns (thereby having only minimal impact on the rights of gun owners), yet might reduce unintentional shootings. For example, accidents with semiautomatic weapons occur because a bullet is left in the weapon even when the ammunition magazine is removed. One study, by the Government Accounting Office, suggests that devices indicating whether a gun has a round left in it would prevent 23 percent of unintentional shootings. But too little is known to make a credible cost-benefit calculation.

Personalized gun technologies, which prevent guns from being fired by anyone except the authorized owner, hold some promise for saving lives by making guns inoperable by despondent teenagers, curious children, and the criminals who steal 500,000 guns each

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year. One of the main advantages of personalized (or "smart") guns is to enhance safety among those people who are not otherwise safety conscious.

Currently, 71 percent of adults and 59 percent of gun owners support requirements that all new handguns be sold with personalized technology. As of this writing, one manufacturer (Sigarms) was preparing to market a personalized gun (for an extra $150) that can only be fired after the operator enters a code number into a keypad beneath the barrel. Several companies already sell retrofit devices that make guns operable only by users who wear special rings. Colt received a $500,000 grant from the National Institute of Justice to develop a gun that can only be fired when the operator is wearing a wrist device that sends radio signals to the weapon, and the Clinton Administration has asked for $10 million to develop the technology. Oxford Micro Devices is developing a handgun that recognizes the owner's fingerprints.

Each personalization strategy does have the potential to reduce unintentional injuries and suicides, and can make guns useless to burglars. But only fingerprint-based technologies have the potential to force all transfers to go through licensed gun dealers.

The benefit that would be needed to outweigh the costs is quite modest. Suppose, for example, that personalized gun technologies would add $100 to the price of a new gun. If the only effect was to prevent one shooting per 10,000 guns sold, such a policy would pay for itself. Our best guess is that the effects of personalized gun technology should easily clear this bar, given that every 10,000 handguns sold are involved in about 3,000 robberies and assaults, and 100 homicides.

Regulating Gun Use

Even if regulation of access to guns fails, it may still be possible to discourage dangerous people from carrying guns into public places or storing them unsafely.

Gun Carrying. In an experiment in Kansas City Missouri, the police aggressively pursued illegal gun carrying in one high-crime area of the city but not in another. While one area experienced a 49 percent reduction in gun crimes during the study period, gun crimes increased by 4 percent in the comparison area during the same period. Since there is no guarantee that the trends in crime in the two areas would have been identical in the absence of the intervention, it is difficult to determine how much of the reduction in gun crimes in the treatment area can be attributed to the program. But evidence of a substantial difference in the numbers of guns seized by police in the treatment versus control area suggests that at least part of the difference may have been due to the gun patrols.

The cost of the additional police time with this intervention was around $180,000. Less quantifiable costs, notably the psychic costs to the innocent citizens who are stopped and frisked, are also relevant. On the other hand, the benefits from the Kansas City gun experiment were, arguably, enormous. If we assume that the entire difference in gun crimes between the treatment and control areas was due to the intervention, estimates of the value of the reduction in gun injuries range from $22 million to $100 million.

Gun Storage. Most gun groups encourage owners to keep guns locked up and unloaded in order to prevent unintentional injury to children. Yet many gun owners apparently believe that storing a gun safely reduces its value in fending off a criminal attack: 57 percent of all handguns are usually kept unlocked, 55 percent are kept loaded, and 34 percent are kept both unlocked and loaded.

Between 1989 and 1993, a dozen states en-

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acted laws that make it a crime to store guns in a manner that makes them accessible to children. Peter Cummings and his colleagues at the University of Washington evaluated the effects of these laws on unintentional shootings of children under 15 from 1979 to 1994, controlling for demographic characteristics and national trends. They found that in the three states that allowed for felony prosecution of parents who store their guns unsafely (California, Connecticut and Florida), the number of unintentional shootings decreased by 41 percent. On the other hand, there was a modest increase in unintentional shootings in the remaining nine states. But the credibility of the study has to be discounted in part because the results may have largely been driven by trends in Florida, where several high-profile cases may have increased compliance with that state's law.

In any event, these findings do suggest that such laws have some effect in reducing unintentional shootings. If a vigorously implemented national policy reduces unintentional gunshot injuries to children by 41 percent, the benefits would be on the order of $100 million to $270 million per year.

The costs of this policy are more difficult to quantify. At least five million households possess both children and a handgun, and thus would be affected by a national safe-storage requirement. If such laws did in fact reduce unintentional shootings to children by 41 percent and had no substantial effect on defensive gun use, the benefits would exceed costs so long as the costs per affected household did not exceed $20 to $50 per year.

Sentence Enhancements for Gun Crimes. As previously noted, many states attempt to deter criminals from using guns by imposing stiffer sentences. Economists Daniel Kessler of Stanford and Steven Levitt of the University of Chicago examined the effects of California's Proposition 8 referendum, which after 1982 imposed additional prison terms for repeat offenders convicted of one of several serious felonies (murder, rape, robbery, aggravated assault with a firearm, and burglary). They found that the serious felonies subject to the sentence enhancements decreased relative to rates of other crimes, and that this difference exceeded what was observed for the rest of the United States over the same period. The result is an implied 20 percent reduction in targeted crimes seven years after the referendum.

Evaluations of sentence-enhancement laws for crimes committed with guns in Florida, Michigan and Pennsylvania also found a deterrent effect. But the benefits come at substantial cost. For the burden on taxpayers of expanding the prison population (at $40,000 a year per inmate), not to mention the costs to the convicts and their families, is large.

We cannot readily quantify the costs of the statewide policies evaluated by Kessler and Levitt. So we focus instead on the costs of implementing Project Exile in Richmond, Va., in which defendants accused of using or carrying a gun were singled out for prosecution on federal charges that carried stiffer sentences.

Two years after Project Exile went into effect, a total of 215 people have been sentenced to prison through the program. The average sentence: 4.5 years. If we ignore the possibility that some of these people would have been sentenced to stiffer terms through state courts in the absence of Project Exile, the added incarceration costs were on the order of $39 million.

How effective would Project Exile need to be in order to produce benefits that outweighed these costs? Observers ranging from the National Rifle Association to *The New York Times* have claimed that Project Exile

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has been responsible for reducing gun-assault injuries by about 30 percent. Making the more modest assumption that Project Exile reduced gun violence by just 15 to 20 percent, the program produced benefits through March 1999 on the order of $150 million to $240 million. Thus, even allowing for the additional costs of incarceration and the cost of managing and publicizing the program, it appears to be a winner.

WHERE NEXT?

First on our own list of policy priorities is the regulation of the secondary gun market. Such regulation could be accomplished by the mandatory registration of all handguns, a policy that is supported by 82 percent of all adults, and even 72 percent of gun owners.

While gun registration was proposed as part of the Handgun Control and Violence Prevention Act of 1995, the measure was defeated by those who fear such a system would make it easier for the government to confiscate all guns. Yet there exist compromise schemes that would enable law enforcement to regulate secondary-market sales while preserving the anonymity of gun owners under most conditions. For example, Congress could require all transactions to be channeled through federally licensed firearm dealers, who could be required to report every transaction, identifying the gun but not the buyer. Such a system would enable federal law-enforcement officials to trace guns used in crimes to their current legal owners. But since records are kept by private gun dealers, it would not create a national gun registry that could be used as part of a gun-confiscation program.

Second, the best available evidence suggests that police patrols targeting illegal gun carrying produce benefits far in excess of measurable costs. The question is whether these gains are outweighed by the intangible costs, including the resentment such programs may engender among those who are stopped and searched. There is a good argument to be made that the benefit-cost is highly favorable: while the imposition is primarily on residents of high-crime neighborhoods, the benefit also accrues primarily to these neighborhoods.

Third, we are encouraged by evidence suggesting that sentence enhancements may reduce gun violence. While incarceration imposes considerable costs on society, our calculations suggest that the benefits far outweigh the costs.

We also support the public health community's call to regulate gun design. Many of the risks associated with current gun designs are borne by parties other than the owner, providing a rationale for regulation that even a free-market-minded economist can appreciate. Note, too, that alternatives to direct regulation would achieve the same end. For example, a requirement that gun owners purchase liability insurance for their firearms could substitute the premium-setting process for direct regulation in providing an incentive for enhanced safety features.

The most important design change is the development of personalized guns. While a personalized gun would be more expensive, even a small gain in public safety would be sufficient to make it worthwhile.

We have not considered more radical policy shifts, like a national ban on handguns, in part because little is known about the intangible costs such a ban would impose on gun owners. In any event, a ban is not feasible in the current American political context. By contrast, our proposals enjoy broad support and should have little impact on the ability of most people to keep guns at home for protection or sport.

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Do bubbles in asset prices exist? That is, is it possible for the prices of stocks and other assets to rise well above the values justified by economic fundamentals?

Famous First Bubbles: The Fundamentals of Early Manias

by Peter M. Garber

MIT Press, 175 pp. $24.95

Reviewed by David R. Henderson

Those who observed, say, the great boom and bust in Tokyo commercial real estate in the 1980s – the land under the Emperor's Palace was, at one point, said to be worth more than all the real estate in California – will no doubt wonder how anyone could ask the question. Yet many financial economists who make a living studying prices of financial assets are, indeed, skeptical that bubbles are possible.

If prices are so obviously out of line with anticipated future profits, they ask, why don't people who see the truth sell short, or buy options on the asset that give them the right to sell shares at the inflated price? Then, when reality bites and the stock price inevitably falls, they make money on the short sale, or on the suddenly appreciated put option.

But even if, as sometimes happens, the lack of a viable market for such derivatives prevents the doomsayers from cleaning up on their insights, many financial economists would still be skeptical of bubbles. Why, they ask, would people knowingly pay a price for an asset that is out of line with any reasonable estimate of its value in the near future?

On the other side of the question are some financial economists, many other sorts of economists, and, of course, much of the general public who think that bubbles are as natural as human greed and stupidity. Many of them believe that there is currently a bubble in U.S. stock prices, especially in the high-tech sector. Even Alan Greenspan thought there was a bubble in December 1996, when the Dow was at 6,500 – 40 percent below its level three and a half years later.

To rationalize their belief that "irrational"

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asset prices are consistent with rational human behavior, financial economists often point to the "greater fool" theory. As in: "I understand there is no way to justify a high asset price based on fundamentals. But if I think there are even bigger suckers than me out there, I can buy the asset and sell it to a greater fool at a higher price."

Actually, it's more fun, and perhaps more illuminating, to look at the "how" of bubbles than the "why." And in the history of speculative price bubbles, three have become the stuff of legend: the Dutch tulipmania of 1634-1637, and the Mississippi and South Sea bubbles in the early 18th century.

Virtually everyone has heard that tulip bulbs once sold for more than the price of a house and, a short while later, collapsed in value. But what really is known about those cases? And why does it matter?

In *Famous First Bubbles*, Peter Garber, a financial economist at Brown University and a global strategist at Global Markets Research of Deutsche Bank, answers both questions. Garber lays out what is known, what is not known, and what is probably made up – in the process poking huge holes in some of the accounts offered by 20th-century economists. Garber's startling bottom line: in all three cases, the prices of the assets – whether bulbs or shares – were apparently based on economic fundamentals.

Start with the two-thirds of the book devoted to the tulip case. One amazing "fact" cited in the best known book that deals with the tulipmania, Charles Mackay's 1841 book, *Extraordinary Popular Delusions and the Madness of Crowds*, is that a single bulb sold for 5,500 gold guilders at the top of the bubble. At today's price of $275 per ounce of gold, that bulb would be worth over $300,000. But, points out Garber, "Mackay provided neither the sources of these gold prices nor the dates on which they were observed."

Mackay's other major "fact" is that, within days, prices of bulbs fell to less than 10 percent of their previous highs. But the actual data Mackay cited to buttress his claim were on bulb sales over 60 years later. Perhaps, writes Garber, Mackay got his 10 percent number from a February 1637 proposal by some florists who, after the collapse of bulb prices, proposed that on contracts written after November 30, 1636, buyers should be able to get out of their contracts by paying 10 percent of the agreed sale price. That proposal, incidentally, was rejected.

As an antidote to all this casual empiricizing, Garber digs up actual data on bulb prices and finds annual double-digit percentage drops. These are big numbers, but hardly what one would expect from all the hoopla. What's more, changes in value at this pace are completely consistent with economic fundamentals. After all, economists value an asset as the discounted sum of the revenues it will yield. Bulbs that yield tulips with beautiful patterns can themselves be propagated, so they yield many more bulbs. Hence, high prices for the original rare bulbs that fall as the supply rises should be no more surprising than high prices for champion breeding horses.

Garber's coup de grâce: in 1987, a small quantity of prototype lily bulbs sold for one million guilders, or over $700,000 in today's dollars. What about the claim, made by retired MIT economist Charles Kindleberger, that the collapse in prices led to an economic slowdown in Europe? Not true, says Garber, noting that Kindleberger's data show a slowdown in the 1640s, long after bulb prices collapsed in 1637.

By the same token, Garber writes, the Mississippi Company and South Sea Company bubbles were not bubbles either. The

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Mississippi stock scheme, the brainchild of early 18th century economist John Law, was built on the value of a French bank run by Law that was granted by King Louis XV a monopoly on tax collection in France, and on trade along the Mississippi River. For Law's plan to justify the high prices of shares in his company, Garber notes, the money printed by his bank would have to cause an economic boom and the company would have to invest in highly profitable commercial ventures.

But neither assumption was implausible. One of the chief investors in the scheme was Louis XV himself, which meant that the man best positioned to block profitable investments would not dream of it. Moreover, Garber points out that Law's reasoning that expansions of the money supply could increase economic activity and lead to higher tax revenues amounted to seat-of-the-pants Keynesianism – an idea not beyond the wisdom of the market to fathom. It was thus not unreasonable for investors to bet that Law could pull it off.

He didn't, of course. But share prices fell only after Louis XV bailed out. Again, economic fundamentals seem to explain the price movements.

Lastly, there is the South Sea Company, a British enterprise with a monopoly on British trade with the South Seas – the Spanish colonies of America – that was worth little because the Spanish government blocked that trade. The Company persuaded the British government to let it issue shares; the proceeds would be used to buy British government debt. To get this permission, the Company paid large bribes to King George I's friends and to leading members of Parliament, and then sold shares to a majority of the members of Parliament.

So, just as in the Mississippi case, high share prices could be justified by the knowledge that all the players who could block profitable investments of the South Sea Company would have a strong incentive not to. But only a few months into the deal, prices fell to a fraction of their peak levels. In retrospect, notes Garber, investors were probably overoptimistic. But he points out that if you can know that only with hindsight, then the original price increase does not constitute a classic bubble.

As to why the bubble controversy matters, Garber is blunt: "The argument is always that the existence of tulipmania proves that markets are crazy…."

As to why the bubble controversy matters, Garber is blunt: "The argument is always that the existence of tulipmania proves that markets are crazy…. Thus these early episodes are the dream events for those who want to control the flow of capital."

I think Garber's right about how the pro-regulation side reasons, and I find his anti-bubble evidence wholly persuasive. But even if there were real bubbles, wouldn't that justify ending regulations on the means by which investors can bet against the price spiral? Then those who wish to invoke the hand of government when they are sure markets have gone cockeyed could instead put their money where their mouths are, buy put options, puncture bubbles, and get rich. M

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BY JOEL KOTKIN

In the last great commercial construction boom Wes Christian, a real estate developer, made his fortune, and ultimately lost it, speculating in office parks, retail development and housing tracts on Houston's periphery. Today, a greatly humbled Christian is seeking to rebuild his nest egg not out among freshly minted developments at the fringes, but in the older, long neglected sections around downtown Houston's aging core.

"Back then, we were buying raw land and the income flows seemed unbelievable. You built without even having tenants," Christian recalls of the boom years while standing in a restored, completely leased 1950s low-rise office building that he owns in Midtown, a five-minute drive from the Texas city's largest modern towers. "Now we are seeking to do things differently and more conservatively in areas like this, where the infrastructure already exists."

Wes Christian's sense that central Houston represents the new opportunity reflects a unique movement in American history – a counterpoint to the out-to-the-fringes mentality that has dominated urban settlement since the end of World War II. In Houston, long an archetype of sprawl, hundreds of millions of dollars is being spent on construction of downtown stadiums and arts centers, the restoration of old hotels and office buildings, and, most remarkably, apartments and lofts for several thousand middle-class residents.

This trend follows decades of rapid depopulation in the city's historic core. At the end of the 1980s, following a catastrophic period for the city's economy, the population of the Midtown area fell to less than 1,000 people, most of them destitute. Only 9 of its 325 homes were owner-occupied.

The return to Midtown represents part of a broader shift toward Houston's inner core. Housing starts inside the loop of Interstate 610, the highway that surrounds central Houston, rose tenfold during the decade, with over 6,500 multi-family units built between 1996 and 1998 alone. Residential growth closer to the city has, for the first time in generations, surpassed that outside the I-610 loop, an area with twice the population.

On first glance, central Houston seems an unlikely place for a back-to-the-city movement. The city's core lacks concentrated stretches of attractive vintage buildings like those found in Baltimore, Boston and Seattle. Yet it is not aesthetics, but economics and demographics, that are driving the recovery of downtown Houston. Growth and diversifi-

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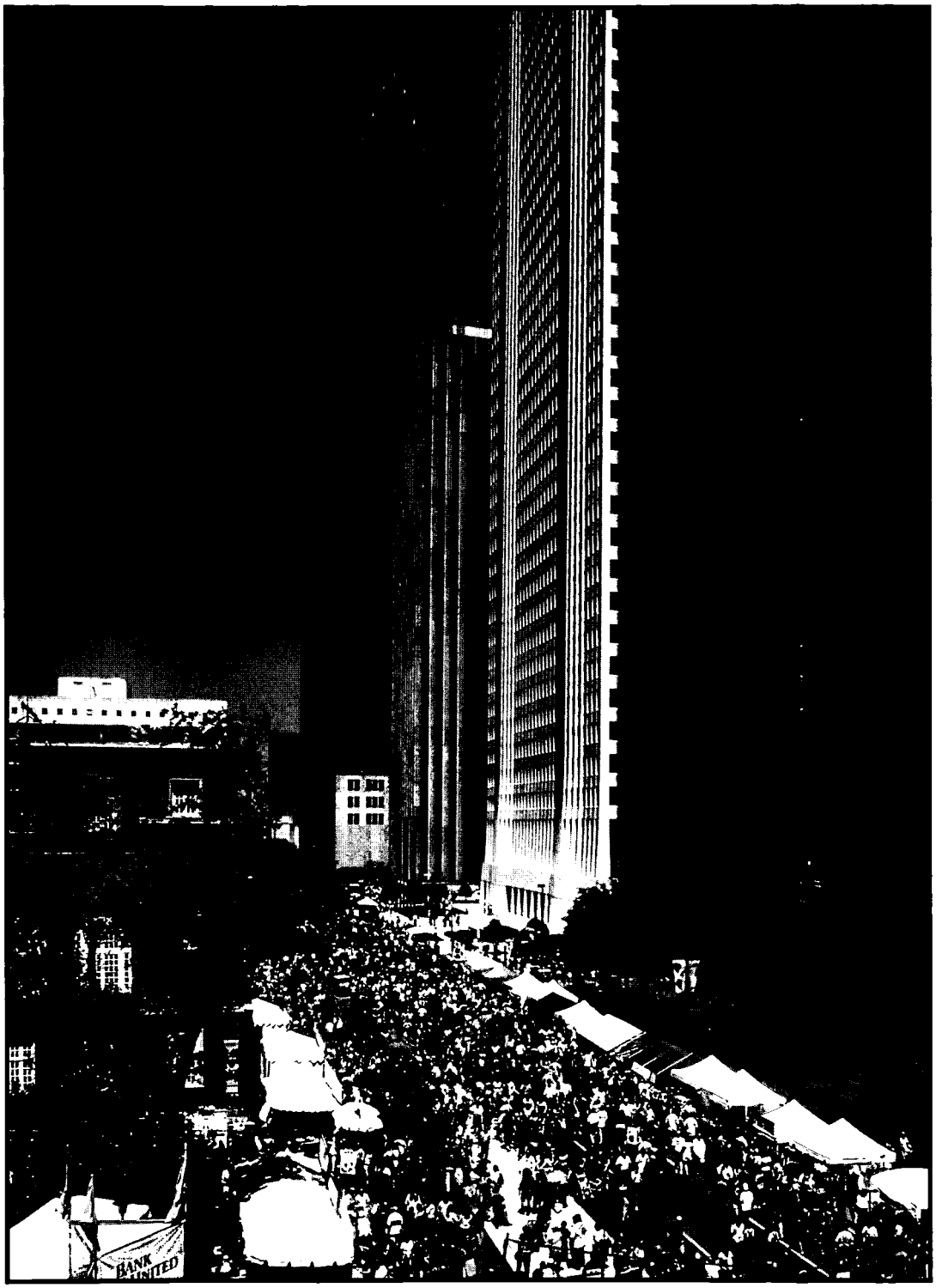

JIM OLIVE

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cation of what was until recently an oil-dominated economy has created a whole new class of business-service professionals – media workers, Web designers, venture capitalists.

From this base, downtown draws its new customers and residents. Surveys conducted last year showed an expanding popular market for the inner city; residents of as many as 137,000 households in the metropolitan era expressed a desire to live close to downtown, a 40 percent increase from five years earlier. Most of them were young or middle-aged, decidedly middle class and well educated. Predominately single or divorced, and without children, they are looking for a lifestyle with shorter commutes, a more varied urban landscape, and proximity to the city's largest concentration of theaters and art museums.

Immigrants have provided another spark for the resurgence of Midtown. Throughout the 1990s newcomers from Asia, Latin America and the Middle East brought a new commercial dynamism to the area. Within walking distance of Wes Christian's buildings, Vietnamese-owned textile stores, groceries and nightspots abound. Noodle companies, restaurants and other retail stores line the broad boulevards.

Christian tries to restrain his enthusiasm about his investments, though it is difficult to remain calm after rents increased fivefold in just two years. It helps that he sees a fundamental difference between the current market and the go-go market of the decade between the mid-'70s and mid-'80s, when office space and the number of office towers doubled. At millennium's end, there were no new soaring high-rise projects gracing the skyline; speculative excess has been kept to a minimum. Most growth now is lower to the ground – residential, retail, entertainment or the arts. In the ultimate land of more-is-better, the shift is to the development of a qualitative experience that only a central core can provide – restaurants, jazz clubs, the sense for people out on a hot, humid Texas night that they are in a real city.

"The appeal of an area like this is mystical," Christian said over a beer at a local hangout in the nearby Bayou Place entertainment district. "This is about things that can't be duplicated further out. What's left of our history, our classic architecture is here. This is about a new kind of Houston that's booming not just because of oil prices, but because we provide additional kinds of services, things that downtowns are best suited to provide."

REINVENTING THE CORE

The downtown recovery in Houston and other cities does not imply that downtowns are, "marching again to grandeur" as an overwrought media report put it. Rather than recovering their place as geographic centers of the entire economy, city centers are adjusting to the more modest, but sustainable tasks that have been performed by the core from the beginnings of civilization. Today, the hope for central business districts – from Houston and Los Angeles to Baltimore and Boston – lies not in the Industrial Age paradigm of high-rises or massive factories, but in rediscovering their preindustrial role as centers for the arts, entertainment, and the creation of specialized goods and services.

This notion represents a quiet revolution in perspective. Traditional boosters of downtowns based their strategy on maintaining the manufacturing, corporate, bureaucratic and support bases that adhered to the center city for most of this century. When those functions began to disintegrate in many cities, some political leaders and academics assumed downtowns were destined to serve as what one commentator called "the preserve of

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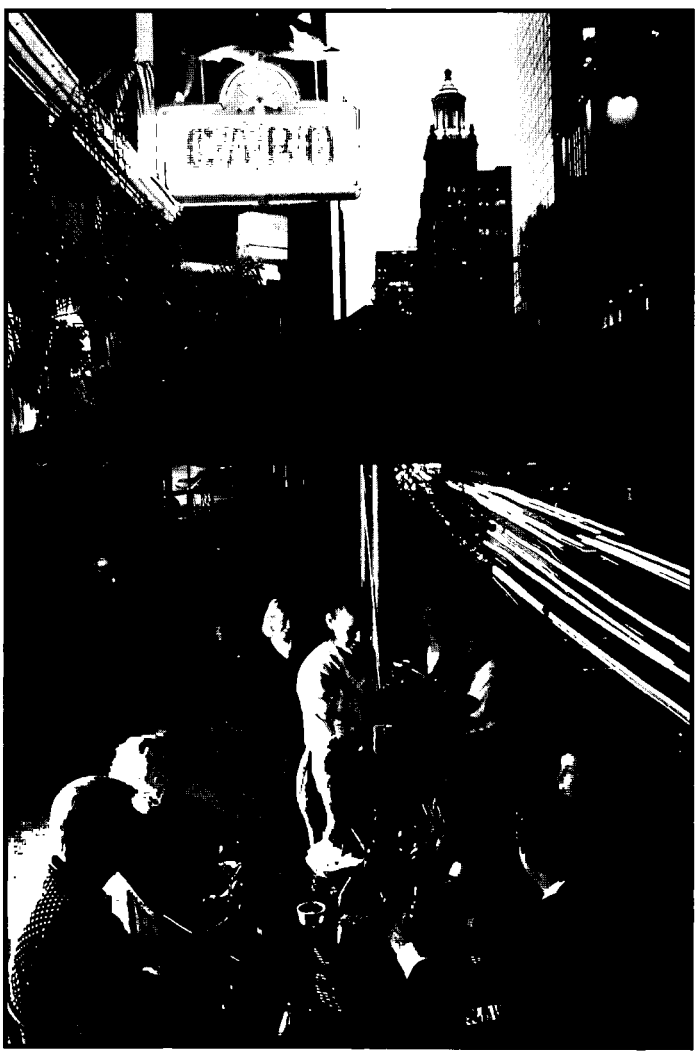
the homeless, the so-called underclass and the persistently poor."

Yet in the digital era, it is the pre-20th century characteristics of cities that have bequeathed a future for the center. Writing of Berlin at the dawn of the 20th century, the sociologist Georg Simmel touched on the essential appeal of the dense urban district: "With each crossing of the street, with the tempo and multiplicity of economic, occupational and social life, the city sets up a deep contrast with small-town and rural life with reference to the sensory foundations of psychic life."

Seizing on this contrast stands at the heart of center-city development strategies not only in older downtowns like Baltimore or New York, but also in more dispersed cities like Denver, San Diego and Wichita. Most critical has been the growth of demographic niche groups – gays, empty-nesters, divorced and never-married people – groups traditionally attracted to the inner cores, in part because they wish to have active social lives. This dependent-free population has doubled in size over the past quarter century. Single buyers of homes have been among the fastest-growing segments in residential real estate nationally; in San Francisco, they account for a majority of sales.

Andrew Segal, a 31-year-old wannabe real estate mogul who has purchased and retrofitted less desirable office space in Houston, Dallas, Baltimore and Hartford, observes that "sex is what sells the city. It's where the single people are, where you go to a bar to meet them. That's what makes it work. In Houston, there are few places for people to walk around and promenade – downtown is the exception."



JIM OLIVE

Still, center cities are unlikely to become a new geographic center for middle-class families. Even the most optimistic predictions for downtown population growth over the next decade project a net increase of less than 200,000 new residents for all the major down-

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towns in the nation combined. This is less than the total growth in the suburbs of one mid-sized city, Seattle, during the 1990s. In 2010, downtown's share of the metropolitan population will indeed rise, but only from 1.5 percent to slightly over 2 percent.

Similarly, the center city will not recover the economic role it enjoyed in the 20th century. The decline in the vitality of office culture, brought about by the downsizing of major corporations and by the march of their corporate headquarters to the suburbs, has reduced the demand for huge blocks of office space. That is one reason why, despite a stronger economy, most major downtowns have seen relatively little office construction. In fact, some downtowns long dependent on corporate headquarters – like St. Louis and Cleveland – have continued to depopulate and decline relative to their regions.

Some urban theorists, notably Susan Fainstein of Rutgers and Saskia Sassen of the University of Chicago, maintain that some urban cores – particularly in global cities like New York and London – can resist the downscaling trend. They have argued that the rising importance of transnational information and financial flows increased the need for centralized command and control centers for supermanagers and strategists whose essential role is to coordinate the activities of others in less rarified locations. They point particularly to the growth of producer services that facilitate the development and sales of goods (as opposed to their manufacture and distribution) which grew from 29 to 36 percent of gross domestic product in the United States between 1947 and 1977. This sector has been widely seen as crucial to the permanent ascendency of cities that possess sufficient depth in fields like law, advertising and international trade.

Yet recent experience and the technological revolution make such assumptions dubious. Indeed, throughout the 1990s, employment in high-end producer services, particularly finance, has continued to shift toward the periphery. Traditional financial centers like Chicago's Mercantile Exchange, Board of Trade and Options Exchange employ some 50,000 people, many of them key punchers, runners and clerks. But in the new century, many of these jobs are likely to be automated. "Where it has taken hold, [the computer] has driven the open-outcry market out of business," notes pension fund manager Gary Knapp of GM Investment Management Corp. "That would be a huge loss for Chicago."

As financial bulletin boards on the Internet increasingly replace human experts, even New York City's expensive decision to spend $900 million on a new stock-trading complex will not guarantee its long-term domination of the financial-service industry. By century's end, major Wall Street players like Merrill Lynch were shifting their emphasis to online trading in order to stay abreast of such innovative out-of-town rivals as Charles Schwab and E-Trade. Although Merrill Lynch could well recover from the shift, its employment base will surely shrink with time.

In the process, the long unassailable centrality of Wall Street as a physical center of the financial industry could become profoundly assailable, becoming less the description of a place than of a virtual community. Al Berkeley, the president of Nasdaq, observes that "the Wall Street that matters will be more and more electronic. The value is going to be in the risk-taking judgment of investors and the knowledge conveyed by broker-dealers."

A PURELY PERSONAL MATTER

For New York and other core cities, surely the prime economic imperative is to hang onto

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skilled workers, not to preserve physical institutions like the stock exchange. In many ways, then, the post-industrial city resembles nothing so much as the pre-industrial city – particularly, the Renaissance city-state or Amsterdam. One historian has called the Renaissance "the age of cities," an age in which urbanites often differed dramatically from their hinterland cousins.

Renaissance cities could be found as well in London, Paris and Amsterdam. Changes in technology, science and theology were ripping away the bonds of the older society and laying the foundation for a new freedom of thought that housed itself most comfortably in the urban core. Freed from medieval restraints, sophisticated urbanites embraced the idea that nothing human was foreign.

The post-industrial city resembles nothing so much as the pre-industrial city – particularly, the Renaissance city-state.

Foreigners, including religious minorities like Jews and Huguenots, found havens in the city for the same reasons it was attractive to those who lived unconventional lives – actors, artists, homosexuals, educated women and the childless. At the height of the Renaissance, half of Venice's "men of good birth" never married. From the 14th century, the rise of the city corresponded to the weakening of extended families and the growth of individualism.

As another historian, John Hale, says, "those who were reasonably well-off felt themselves to be separate units. Increased urban prosperity led to greater mobility – from country to town and country to country – which drew the ambitious individual away from the settled kinship group into a house of his own and a self-sufficient way of life.

This individualism expressed itself in everyday life, just as it does today in myriad urban districts. The residents of Florence, says historian Jacob Burkhardt, regarded such things as dress as "a purely personal matter, and every man set fashion for himself."

By the 16th and 17th centuries, the individualism and diversity characteristic of the

This openness to the exotic could be seen in everything from dress to architecture to the plays of Shakespeare and writings of Montaigne. Urbanity also produced a new core of liberated women who in 17th century Amsterdam could conduct business and converse with men unchaperoned. Higher levels of public safety and the advent of street lighting further bolstered this development. By removing the dark corners, streetlights allowed Amsterdamers, male and female, to expand the hours of both commerce and pleasure. Lighting, incidentally, also reduced the incidence of drunks drowning in the canals. On every level – social, technological, economic, artistic – Holland was, as the French priest Pierre Sartre observed in 1719, a country where all is new.

In Amsterdam, and later in London, which grew fourfold in the 16th century alone, the urban core evolved into an increasingly sophisticated provider of cultural goods and services. Cities became more conspicuously the stages of urban spectacle and provider of the arts to an ever-more-literate populace. Modern information-based industries –

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finance, publishing and insurance – can trace their origins to this time and to specific areas of London, like St. Paul's, Fleet Street, the Lloyd's coffee shop and the City itself.

Today many of these information industries can conduct their business electronically and at great distance, yet the essential nature of these linchpins of urban commerce remain dependent on the sorts of people who prefer to live in cities. As long as the urban populations possess the necessary skills, employers who rely on creative workers will still conduct business in cities.

And although new technology can spur outward movement, technology itself, particularly the Internet, allows workers to "telecottage" comfortably in the urban setting, for those who choose to do so. This avails them access to the privileged information only available by networking personally in a place like Wall Street or the Chicago Loop. Indeed, this person-to-person contact becomes one of the best economic reasons for living close to the central core.

But there is a limit to the degree that cities can be pigeon-holed. A vast decentralized city like Los Angeles simply does not fit into the traditional, highly compact city pattern; it is so huge that it could encompass the entire land mass of Manhattan, San Francisco, Boston, Minneapolis, Cleveland, St. Louis and Milwaukee, with room to spare. In Los Angeles, the Renaissance functions of the core city are being reinvented, not so much downtown but in dynamic, smaller centers like Beverly Hills, Santa Monica, Pasadena, Glendale, and even what Johnny Carson used to call "beautiful downtown Burbank."

In some of the stronger central cores – Boston, Manhattan, San Francisco and Chicago – gentrification and tourism could create a new kind of city dominated by demand for the services provided by the new urbanite professionals and creatives. Even as they retain the look of 20th- or even late 19th-century center cities, these areas will no longer serve as headquarters towns for large companies, but will become more like boutique malls that cater to diverse needs.

Less favored traditional downtowns, even those with attractive natural features like harbors and riverfronts, could experience a similar downtown revival, but on a less grand scale. To be sure, pockets of vitality exist in areas like Philadelphia's Rittenhouse Square and Baltimore's Inner Harbor. Yet for the most part these downtowns have declined precipitously from their once-central roles, and there's no going back. As recently as 1988, downtown Baltimore accounted for one-fourth of its region's office-leasing activity; a decade later that figure is less than 10 percent. Two out of every five of Baltimore's jobs are in the public sector, while the vast majority of new investment is concentrated not in the historic downtown, but in a small entertainment area around the Inner Harbor and the Camden Yards baseball stadium.

Attempts to revive cities around casinos, football stadiums and arenas at best create a kind of Potemkin village that provided a patina of prosperity against a backdrop of perhaps irreversible decline. Downtown Cleveland boasts an impressive array of symbolic centers: the heavily subsidized Gateway project, which includes Jacobs Field for major-league baseball and Gundy Arena for professional basketball, the Rock and Roll Hall of Fame and several other retail-oriented developments. But the results have been negligible for most Clevelanders. The city's overall share of employment and income has continued to decline, while its portion of households below the poverty line has increased.

At best, these efforts have prevented cities

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like Cleveland from becoming modern-day Carthages, dead husks giving mute witness to past glories. Suburbanites, who have taken most of the new jobs created by Cleveland's downtown recovery, may feel better about working in the core, but the bulk of the job creation continues to move to the periphery. "We didn't create a booming economy," explains Richard Shatten, a leader in the comeback effort who now teaches at Case Western Reserve University. "We found a reason [for downtown] to exist."

But perhaps the most tragic fate awaits those cities – usually cities built around the mass-industrial base – that lack even the basic attractions of a Baltimore or a Cleveland. Without any sustainable appeal for the new urbanites, cities like St. Louis and Detroit could become deserted relics of a bygone era. For one thing, suggests William Frey, a demographer at the Milken Institute, there may not be "enough affluent yuppies to go around." New urbanites may well revitalize some well-placed cores, he acknowledges, but, "how many of these people want to move to downtown Detroit?"

In such areas, it is doubtful that even the new casinos and stadiums will arrest the precipitous decline. Both St. Louis and Detroit, for example, have lost roughly half their population since the 1950s, and they continued to lose population throughout the 1990s, despite nearly three decades of civic efforts to turn themselves around.

Inevitability, even if modest improvements are made possible, those cities are likely to remain mere shadows of their past greatness. One can still admire the magnificent infrastructure – the train depots, Art Deco office towers, old department store buildings, decorative streetlights and clocks. Yet those treasures remain derelict or at best underused,

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much like an old man's clothes now several sizes too large.

THE MAGNIFICENT ANACHRONISMS

At the millennium's start, most downtowns no longer function as anything close to the

dominant centers of their regions. The central districts of vital regions like Los Angeles, Dallas, Atlanta and Phoenix have not burgeoned even as their surrounding economies have expanded enormously.

That is not the case with the magnificent anachronisms of Chicago and New York. Despite the exodus of major firms and of much of their middle class, those two cities retain the vast majority of their region's commercial office space within their central districts. They have become unique in their successful resettling of their urban core; indeed, those two cities account for nearly one-third of the nation's downtown resident population.

With their hard-wired centrally oriented transit systems, stunning skylines and well-developed cultural institutions, the anachronisms succeed because they provide the infrastructure critical for the face time needed in trading, communications and culture-based services. Although it is highly unlikely that their form of urbanization will ever be repeated under modern conditions – in this auto-dominated age of sprawl one rarely hears about a city becoming another Manhattan or Chicago – these quintessential early 20th century cities could, in part because of their uniqueness, secure important roles in the 21st century.

To understand the durability of New York and Chicago, one must understand how they evolved. New York, the first of the truly great American cities, was from its origins primarily a commercial town, not an industrial one. Like its original namesake, Amsterdam, Manhattan was always a city "infatuated with trade," as one early observer commented. In contrast to Puritan Boston and Quaker Philadelphia, the colony's social system was dominated early on by a relatively free-spirited, high-spending and pleasure-minded elite, one given to indulgence in theater, dance and material accumulation.

New York's other great endowment was its magnificent waterfront. No other eastern city, save Baltimore, had anything remotely as suited for commerce. Gotham also abutted the Hudson River, connecting it to the

DOMINIC ARIZONA BONUCCELLI

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expanding agricultural region to its north and, after 1825, through the Erie Canal to the wider American hinterland. The port became the nation's largest in 1800 and consolidated its domination of trade throughout the next half century. It accounted for two-thirds of all U.S. imports by 1860.

Trade quickly transformed New York into the nation's commercial capital and, by 1803, its largest city. As in earlier urban agglomerations, the city's merchant class congregated close to the wharves, particularly in the area around Wall Street. Traders, financiers and insurers all clustered together in the packed streets to arbitrage not only goods, but also information. These 19th century entrepreneurs, like their equivalents a century earlier in London, provided the seed bed for the city's later development into the nation's burgeoning information, financial and trading center, as well as its window on the world.

As transportation and communications improved, particularly with the building of the subway system, white-collar workers moved northward to work in the office buildings being erected in the middle of the island. With the construction of the first skyscraper in 1895, New York epitomized the emergence of a new kind of vertical metropolis dominated by service industries and corporate bureaucracies.

Despite its Midwest location in the industrial heartland, Chicago also developed primarily as a commercial city. Compared with eastern cities like Philadelphia, Boston, Newark and even its Midwestern rival, Cincinnati, Chicago in 1860 employed a far smaller part of its population in manufacturing. Although it lacked the unique geographic gifts of New York, its commercial culture – particularly in comparison with more conservative rivals like St. Louis – and its early willingness to embrace new technologies, like railroads, helped push Chicago towards preeminence. *The Chicago Daily Journal* captured the scene of a mid-19th century commercial center convulsed by manic activity:

> *Our streets provide an animated picture. thronged with laden wagons, filled with busy people, vocal with rattling of wheels, the rush of steam, the clank of machinery and many voices, good gaily flaunting from awning posts and store doors, docks piled with boxes, bales and bundles of merchandise, warehouses like so many heart ventricles receiving grain on one side, and with a single pulsation, pouring it out on the other into waiting vessels and steamers to be borne away on the general circulation...*

By 1871, Chicago had passed St. Louis in population and emerged unchallenged as America's second center for the clustering of office workers and the towers to accommodate them. Like New York, Chicago's business elites celebrated their success not so much by building huge factories, but by erecting office buildings of steel, stone and glass – monuments to the vitality of commercial capitalism.

This predominately commercial culture has helped New York and Chicago to adapt more successfully than their counterparts. Although both cities developed manufacturing economies, their economic soul remained concentrated on commerce and information. The two great cities have lost many jobs in the last half century, yet they enter the millennium dominating many economic sectors, like financial services and law.

Manhattan, for example, is still home to 4 of the top 6 accounting firms, 6 of the 10 biggest consulting companies and all 10 of the largest securities firms. The center's domination is also palpable in expanding fields like new media, where Manhattan accounts for

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roughly half the companies in the region. Chicago ranked second in securities and commodities trading, and boasts the second-highest percentage of workers in information-oriented industries among the nation's five largest cities.

Such pockets of expertise have helped these cities adapt to a new role as unique agglomerations of high-end service providers. By the millennium's end, eight of Chicago's 10 largest public companies were headed elsewhere. Yet the city was enjoying its strongest economy in decades – a boom built largely on firms specializing in legal, financial, advertising and trade. In professional services, both cities enjoy the largest concentrations of major firms – two to three times more than the San Francisco Bay area or Atlanta.

The unique concentration of such services explains why Sol Dutka, the founder of market research firm Audits and Surveys, chose to remain in Manhattan even as many of his clients moved away. Dutka explains his decision to stay in New York as driven largely by his company's need to tap the city's dense concentration of specialists and its highly cosmopolitan workforce.

This essential workforce, Dutka suggests, does not have the characteristics that would appeal to heartland industries. "I have a lot of resident geniuses here who would be unacceptable in a place like Charlotte. They're just strange people," Dutka says, pointing towards the hallway outside his office. "Here they know that they are welcome, that the door is wide open to them."

It's the city's concentration of such people that provides its unique competitive edge. New York's density of service providers, academics, think tanks and artists has long provided a powerful strategic advantage. Close-in physical proximity remains, in Dutka's view, critically important, particularly when addressing the needs of clients with tight deadlines. "I can get 24-hour service for anything in New York, whether it's in graphics, getting extra time on someone's computer, or getting something photographed. It's terribly important. You want a consultant or technician, you can get them at a minute's notice. I have access to services and people I would never had if I had moved."

CITIES WITHOUT CHILDREN

This geographic reinvention of the central city – so marked in Manhattan and along Chicago's lakeshore – rests upon a new and radically different demography. Even as the traditional middle class family has continued to decamp from the center, the city is being revived by the arrival of singles, gays, "creatives" and other educated, childless, adults.

This demographic and economic restructuring suggests a return to the center's reliance on a divergent and, by some notions, deviant, population. In the Industrial Age, by contrast, many inner urban neighborhoods served not only an economic function but as a place where middle- and working-class families raised their children amidst the often discordant rhythms of urban life. Today many of these same places – Boston's North End, New York's Greenwich Village, Seattle's Ballard – have increasingly become domiciles for the affluent and childless.

Manhattan has one of the highest per capita incomes in the nation and one of the lowest percentages of residents from 5 to 17 years old. A 1998 survey of residents in New York's now fashionable downtown area near Wall Street – where some 2,400 housing units have been converted from office space – found that 88 percent were under age 45, 60 percent were single and a similar percentage had household incomes in excess of $120,000 annually.

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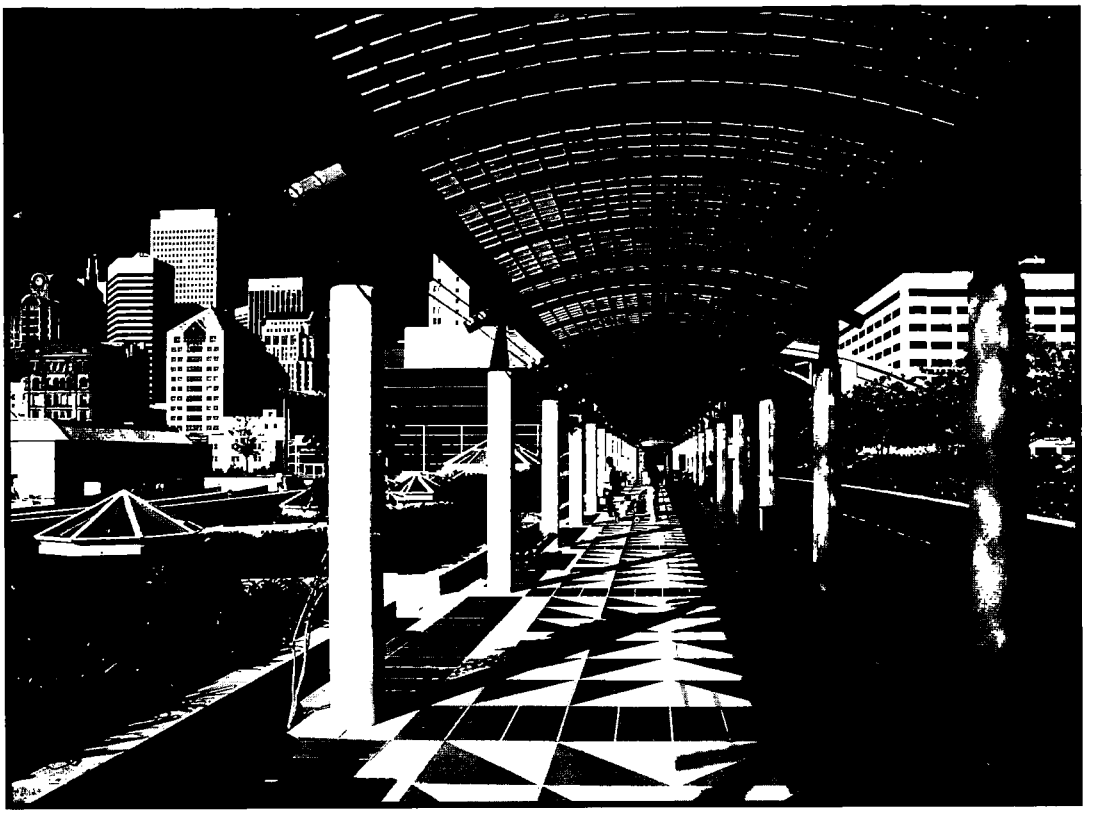

PERRETTI & PARK PICTURES

A similar process is transforming part of Chicago, where desirable close-in neighborhoods like Lincoln Park and Bucktown have become both child-scarce and expensive. Here, housing prices rose as much as 40 percent annually by the late 1990s.

In the 1950s the average residence in Chicago's Lincoln Park neighborhood had more than four occupants; by 1998 that number had dropped to less than two. Robert Bruegmann, an urban scholar at the University of Illinois at Chicago and a Lincoln Park resident, notes that the area was once made up of working-class families and was surrounded by poorer areas. As he candidly puts it, "Gentrification takes on the character of an invasion pattern. It goes to the center and drives poverty out. My neighborhood is nice because a lot of people left. The poor people left – that's why we like it."

As in the Renaissance cities, these have revived on a base of highly individualistic cultural attitudes defined by freedom from traditional values. For example, gay couples have been about twice as likely to move into the city as the general population. As in the Renaissance cities, toleration plays a key role in attracting these newcomers to the core.

In a city like New York, being single, childless or gay is no longer exceptional. "We like to walk in public without getting strange glances, or whispers behind our backs, which is what happened down South or on Long Island," explains Chris Kohler, a public health counselor who moved from Virginia with his partner in the early 1990s.

Perhaps nowhere is this shift from traditional families more evident – and less

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expected – than in Seattle. When he first arrived in 1955, Richard Morrill, a University of Washington demographer, encountered a city that was "very middle class, union blue collar, homeowning." But in the last census, he notes, the city had the lowest percentage of residents between the ages of 5 and 17 of any major American city. Boston, Manhattan, Denver and San Francisco followed closely.

As in these other cities, Seattle's demographic transformation has been powered by its attraction to upwardly mobile professionals, many of whom have postponed childbearing or intend to remain childless. Today, notes Morrill, once family-oriented Seattle neighborhoods like Fremont, Queen Anne and Capitol Hill have become simultaneously fashionable and almost child-free, with 5- to 17-year-olds as low as 5 percent of the population. Overall, the number of schoolchildren in the Seattle public schools dropped by half between 1962 and 1990.

At the same time, couples with children are driven to leave the city, both by poor education and by high real estate prices. Indeed, fully one-third of all children born in Seattle move out within five years. "Even the people who want to stay and keep the urban lifestyle have to move. You can't buy a decent house here for less than $240,000," notes David Sucjer, a Seattle developer. "And even if you can pay that, in the end, the schools force the issue for almost everybody. You have kids, you move to suburbs."

In the process, Seattle's once strong reputation as a blue-collar, white ethnic town has faded into an image more akin to its most famous chain, Starbucks, the quintessential meeting place of upwardly mobile singles. Neighborhoods like Pioneer Square and Belltown have been quietly transformed from dumping grounds for the homeless to condo heaven for Microsoft millionaires. A city that gave the country its first general strike and whose working-class politics once led Postmaster James Farley to refer to Seattle as center of the "Soviet of Washington" has lost virtually every trace of its proletarian culture.

As in the Renaissance cities, the urban habit of toleration plays a key role in attracting newcomers to the core.

Much the same has happened to its ethnic identity. Even the Ballard neighborhood seems to have changed irrevocably. "There used to be a strong sense of Scandanavianness in places like Ballard, but now it's just become another yuppie neighborhood," observes Eric Scigiliano, a columnist for the local alternative paper *Seattle Weekly*. "You can't even get a decent smorgasbord there."

THE CITY AS BOUTIQUE

These demographic changes also parallel a shift in the economic functions of core areas. In Seattle, demographic change has been hastened by a shift of both manufacturing and warehousing to cheaper areas. "It's an era of land inflation in the city and it's becoming too expensive for small industrial and warehousing companies," observes Paul Sommers, executive director of the Seattle-based Northwest Policy Center. "Retail, housing and head-

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quarters of companies like Starbucks are moving in. The industrial zones increasingly don't even look industrial."

Sommers sees Seattle as a kind of yuppie urban village that represents an increasingly small proportion of the region's population. In 1970, for example, Seattle accounted for half the population of King County and over one quarter of the region's total; by 1998, its population represented barely a third of King County and just one in six residents in the greater metropolitan area.

This new economic role for center cities can be best described as that of a boutique. Central cities are become highly specialized places almost totally dependent on the information industries, high-end services and tourism. The most successful of these are smaller, attractive, single-friendly, deindustrialized cities. Boutique cities – like Denver, Boston, Seattle and San Francisco – are generally those that have always had relatively small working-class populations or have lost much of those populations over the past two decades. Gerald Glick, a prominent developer in Denver's "Lodo," or Lower Downtown, notes that "Denver was never an industrial city. The people make their choices for lifestyle purposes and for some of people who choose to live here, this is a way to be part of a booming region but enjoy an urban way of life."

Lacking working-class and poor residents, these cities long ago developed a strong white-collar orientation and boast among the highest percentages of college graduates of the largest American metropolitan areas. As a result, the recent shift to high-technology and information industries has disproportionately aided these regions, which are now home to the highest concentrations of technology-oriented companies in the country.

Although most of this growth has taken place in the periphery, the boutiques thrive by providing financial and other high-end services, as well as restaurants, art galleries and other entertainment for the well-heeled technological elite. This helped the central cores of San Francisco Boston, Denver and Seattle to thrive in the 1990s.

Arguably the most complete adaptation to the boutique model can be found in San Francisco. Once the unquestioned center of the Bay Area economy, San Francisco now simply is one node – and arguably not the most important node – among a series scattered through the region. It's a culture, busi-

DOUG MINDELL

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ness-services, media and tourism Mecca, but hardly the vital heart. Nearly 30 percent of the region's population lived in San Francisco in 1950; today, the figure is 13 percent.

In 1980, San Francisco was the largest employment center in the Bay Area. Today the city has about the same number of jobs as it did then, but the outlying areas – notably Silicon Valley and the East Bay – employ twice as many people as they did in 1980. In 1990, San Jose, the capital of the Valley, with nearly 900,000 residents, emerged as the Bay Area's largest city. And by 1998, roughly half the Bay Area's 500 largest public companies were located in Santa Clara County – five times more than in San Francisco. Lynn Sedway, an economist whose office is in the city's financial district, notes that "ever since the 1980s, the real growth in the Bay Area has been San Jose and the other peripheral areas. Everyone realized that San Francisco had to become a subsidiary of Silicon Valley."

DOMINIC ARIZONA BONUCCELLI

This transition to boutique status was not planned; indeed, it occurred over the objections of the city's traditional business elite. Just 50 years ago, San Francisco was a brawling, ambitious town run by corporate visionaries like Bank of America founder A.P. Giannini and a host of firms deeply rooted in the city – food-product companies like Folgers and MJB, manufacturers like Stauffer Chemicals, Levi Strauss and Schlage Lock, as well as a host of shipping firms, including the Matson Lines and the American Hawaiian Steamship Company.

Even as the city began to lose its industrial and demographic primacy to Los Angeles, the city's leaders hoped to regain the initiative by making San Francisco the preferred corporate headquarters for West Coast financial and other service firms. Their dream was to create a highly compact West Coast alternative to New York and Chicago, complete with its own transit-centered high-rise complex, luxury apartments and elite shopping.

Yet this drive floundered, largely due to the determined opposition of neighborhoods and the thousands of counterculture activists who had flocked to the city since the hippie days. But it was also a matter of civic identity. For one thing, San Franciscans have always tended to love their city for reasons that are more aesthetic than economic; it is a city less enamored with power and cultural dynamism than with spectacular views, a mild climate and charming architecture.

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By the late 1980s, such attitudes spurred a coalition of activists and neighborhoods to impose strict limits on high-rise development. To some on the left, the success of this movement suggested the rise of what Richard DeLeon of San Francisco State University called "post-materialist populism," marrying local anti-growth sentiments with more traditional 60s-style progressive cultural views embracing environmental, minority, neighborhood and labor concerns. Business leaders, on the other hand, were horrified. "We were becoming the laughingstock of the country," says Art Cimento, principal at McKinsey & Company's San Francisco office.

But post-materialist populism proved to have anything but populist impacts. For one thing, growth controls inadvertently prevented the overbuilding that led its rival cities – Los Angeles, New York and Chicago – into a real estate crash. It also pushed development into other areas, notably South of Market, where multimedia companies and dot-coms ultimately would cluster. Between 1996 and 1999, the area experienced a doubling of rents, driving out many industrial firms, along with the remnants of blue-collar jobs.

With office, commercial and housing space severely limited, San Francisco rapidly became one of the nation's most successful cities at the expense of economic diversity. Blue-collar industries, like apparel, have lost ground and scores of smaller manufacturing firms have departed for other locales or simply gone out of business. The result has been an urban economy that has precious little room for middle-income residents or the working class. Says McKinsey's Cimento: "The biggest concern I have is a divide between the investment banker who's making $1 million a year and the person who can't stay here making $60,000. You need people to run the dry cleaners and work in the restaurants, but they can't afford to be here."

What now remains of the poor, not only in San Francisco but also in other boutique cities like Seattle, is a largely dysfunctional underclass. Unlike the working- or middle-class population, or the local artists who first gentrified those areas and can no longer afford to live in them, the *lumpenproleteriat* rely on public subsidies or subsist on the city streets. Indeed, this street scene is so bizarre that one prominent historian characterized it as "a cross between Carmel and Calcutta."

This leads to the odd phenomena – seen in places like San Francisco's South of Market and Seattle's Belltown – of rapidly gentrifying areas alongside some of the most intense concentrations of the homeless. These cities may have to cope with the continuing presence of a seemingly permanent underclass. San Francisco, the nation's 13th largest city, has the dubious distinction of having the third largest number of homeless.

These social dichotomies are less obvious in the financial district or in the tourist hangouts along Union Square and Fisherman's Wharf than in other parts of the city. In the rapidly changing districts south of Market, one can dine in elegant restaurants while homeless people seek shelter in the doorways of adjacent office buildings. Even as the new rich drive prices to record levels in fashionable neighborhoods like Pacific Heights and the Marina, other areas – notably parts of Richmond, North Beach and Haight-Ashbury – appear more bedraggled, dirtier and less prosperous than they did a decade ago.

"You have a wide divide we see every day," notes Brian Gaines, who owns a Ben & Jerry's on the corner of Haight and Ashbury. "For the more affluent people, the city represents a giant playground. But every day people in this neighborhood are confronted with the people on the street."

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MINORITIES AND WOMEN NEED ACCESS TO CAPITAL

According to two new reports from the Milken Institute that were released in Washington this fall, minority- and women-owned businesses continue to have difficulty raising capital and credit to grow and sustain their firms.

The first, *The Minority Business Challenge: Democratizing Capital for Emerging Domestic Markets*, was written in conjunction with the Minority Business Development Agency of the U.S. Department of Commerce. It is a follow-up to last year's report from the Institute, *Mainstreaming Minority Business.*

The minority business study, which was released at an MBDA conference for entrepreneurs on September 25, concludes that the failure of minority-owned businesses to gain greater access to capital put the ongoing health of the economy at risk. It found that minority-owned firms grew by 17 percent from 1987-97 – six times the growth rate of all U.S. companies. Yet they received only 2 percent of all private equity investment.

The newest report, *Economic Prosperity, Women and Access to Credit: Best Practices in the Financial Markets*, makes similar points about businesses owned by women. In 1972, women owned less than 5 percent of all U.S. companies. By 1992 that figure had risen to 34 percent. The report, which was commissioned by the National Women's Business Council, outlines current initiatives to reduce the cost, and increase the accessibility, of capital to these business. It was released on October 4 at a luncheon on Capitol Hill.

Both reports are available through the Milken Institute Web site (www.milkeninstitute.org), or by calling 310-998-2600.

IT'S THE ECONOMY, STUPID

Land has long been viewed as the key element in the search for peace in the Middle East. But during a two-week trip to the region this fall, Glenn Yago, director of capital studies at the Milken Institute, found that pocketbook issues are playing an increasingly important role.

"The reality of peace in the Middle East has more to do with markets than geography," argues Yago, who spent much of September in Israel, Jordan and the Palestinian Authority territory meeting with government, finance and corporate leaders as an adviser for capital market reform. Among his contacts: former Israeli Prime Minister Shimon Peres, Jordan's Queen Rania Al-Abdullah, and Israeli Finance Minister Avraham Shochat. "The peace process," Yago concludes, "has put too much emphasis on politics, and not enough on economics."

The Milken Institute, in conjunction with the Tel Aviv-Los Angeles Partnership, has been assaying impediments to growth in Israel over the last three years. And one proposal to come out of this research is nearing fruition: Israel is about to use revenue bonds to pay for domestic municipal projects.

But this was the first time Israel's neigh-

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New Publications

- ***Banking Systems Around the Globe: Do Regulation and Ownership Affect Performance and Stability?*** **by James Barth, Gerard Caprio, Jr. and Ross Levine, looks at how regulatory restrictions affect financial development in countries around the world.**
- ***Blueprint for a High-Tech Cluster: The Case of the Microsystems Industry in the Southwest,*** **by Ross DeVol, analyzes the critical elements needed for building regional high-tech clusters, using the American southwest as a case study.**
- ***Developing the Human Capital-Intensive Sector in Russia: A Chance for Economic Revival?*** **by Michael Intriligator, Serguey Braguinsky and Vitaly Shvydko looks at how Russia can help itself by taking better advantage of a highly skilled work force.**
- ***Capital Access Index: 2000 – Middle East Region,*** **by the Milken Institute's Capital Studies group, is a special edition of our annual index. This one looks at the openness of capital markets in the countries of the Middle East region.**

Publications can be ordered through the Institute's Web site: (www.milkeninstitute.org), or by e-mail (publications@milkeninstitute.org), phone (310-998-2600) or snail mail (Milken Institute, Publications Dept., 1250 Fourth Street, Santa Monica, CA 90401).

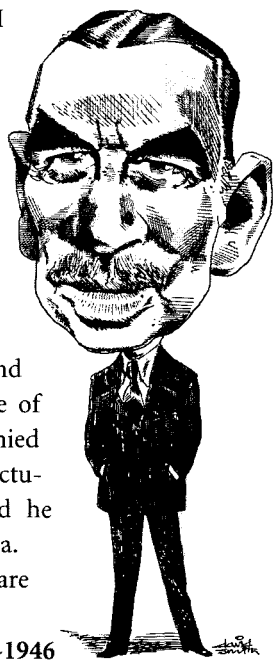
bors have been involved in talks. At meetings in Amman, Nabulus, Ramallah, Tel-Aviv and Jerusalem, representatives of U.S. and Middle East governments, and finance and business organizations discussed ways to encourage foreign direct and portfolio investment.

Smudge Revealed

That's right: If you line up the spines of issues five through eight of *The Milken Institute Review*, you'll see a caricature of John Maynard Keynes, a towering presence in modern economics.

Keynes is best known, of course, for the great insight that economies return too slowly to equilibrium after macro shocks – and that government can change aggregate demand (and thus output and employment) through tax and spending policies. He never had much influence, though, on the policy makers who might have ended the Great Depression – Franklin Roosevelt thought he was a limp-wristed crackpot.

For that matter, governments also ignored his equally profound insights into international finance. His gloomy predictions about the consequences of the Carthaginian peace imposed on Germany after World War I came true. And the failure of the Americans to heed his advice in designing the IMF after World War II was probably a serious mistake.



However, if living well is the best revenge, Keynes came out way ahead. For as a self-made millionaire and member of the inner circle of the Bloomsbury set, he denied himself no pleasure – intellectual, cultural or sexual. And he even got to marry a ballerina.

Who says economists are boring?

J.M. Keynes, 1883-1946

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So little space, so much to write. Yes, due to circumstances beyond my control (too many interesting articles that couldn't easily be cut), I've only got two pages for my highly opinionated views on what's worth reading these days. But I what I lack in quantity...

WHAT MUST BE DONE

The Brookings Institution has long put out an annual volume called *Setting National Priorities*, which constitutes the centrist economic establishment's wisdom on a variety of policy issues. But it no longer has the one-stop-shopping appeal that it offered in the 1980s, in part because centrist policy views are no longer so easily defined, and in part because Brookings is no longer the New York Yankees of think tanks. Perhaps it's not surprising, then, that *Priorities* has a bit of competition – part of which comes from a scholar who actually plies her trade at The Brookings Institution.

Updating America's Social Contract, a book put out by Columbia University's American Assembly in cooperation with Brookings and the Urban Institute, was written by three policy mavens who really know their stuff: Rudy Penner of the Urban Institute, Belle Sawhill of Brookings, and Tim Taylor, the editor of the American Economic Association's *Journal of Economic Perspectives*. Moreover, it has the great virtue of limiting the ground it covers to manageable proportions, offering essays on just three key issues: productivity growth, income inequality and the economics of an aging population.

If you follow political economy closely, chances are you've read much of what the authors call their "radically moderate" take on the great political/economic challenges of the next few decades. Indeed, you may find it a bit too much like a primer. But for the rest of us, it is a very useful, very compact review of the state-of-play on the core issues facing an economy without issues – or at least issues capable of frightening politicians into decisive action. [*Updating America's Social Contract, W.W. Norton, 2000. The list price is $15, but Amazon.com has it for $12.*]

MICROSOFT AGAIN

One difficulty in making sense of the antitrust case against Microsoft is the virtual absence of experts without a stake in the outcome.* Those who pay attention to these things know that even much of the trade press has taken sides – in most cases, with Microsoft's Silicon Valley nemeses, Oracle and Sun Microsystems.

Richard McKenzie, an economist at the University

**Even I am a consultant to Microsoft. — pp*

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of California (Irvine) and a deep skeptic of government's capacity to regulate well, is the exception. Indeed, while his recent book, *Trust on Trial*, is a fierce denunciation of the government's inability to resist the urge to meddle in the software industry, nobody has accused him of bias born of self-interest.

His latest words on the subject, a Policy Analysis from the libertarian Cato Institute, made some news by debunking the idea that Microsoft Windows is protected by an "applications barrier to entry" consisting of the 70,000 software programs written for the Windows family of operating systems. The judge in the case bought into the idea that nobody dared compete with Windows because an upstart would have to offer a comparable amount of software – from Netscape to Napster – to make its operating system as useful.

In fact, as McKenzie documents, there probably aren't more than a few thousand software applications written for Windows. And the vast majority of Windows users run the same dozen or so programs – think Microsoft Office, Quicken, Wordperfect, Photoshop and the like – virtually all of the time. That doesn't quite prove the point that those dozen or so programs don't, in fact, constitute a barrier to entry. But it certainly does document the need for more rigorous thinking about why Windows became dominant in the first place. And it should make people wonder why Uncle Sam is so hell-bent on busting up the world's largest software company. [*"Microsoft's 'Applications Barrier to Entry': The Missing 70,000 Programs"; download from www.cato.org/pubs/pas/pa-380es.html.*]

—Peter Passell

The Big Picture

Academic economics operates in a world of specialization in which good scholars think big at their own peril. For one thing, graduate school doesn't prepare them for interdisciplinary research. Budding scholars get training that's better for deciding whether the demand for Costa Rican bananas is elastic, rather than determining whether Africa will ever be able to grow its way out of poverty. For another, Big Think is seriously hard – too hard for all but the brightest.

But J. Bradford DeLong's doesn't lack for smarts – or the nerve to survey the universe from afar. Indeed, he is busily writing about the broadest topic one can imagine: what the last hundred really really meant. And he doesn't mind if you and I peek at the work in progress.

"The history of the 20th century can be summarized in five propositions," he writes. I'll keep you in suspense about propositions one through four, but give you a preview of number five: "Economic policy – the management of their economies by governments – in the 20th century was at best inept. Little was known or learned about how to manage a market or a mixed economy."

DeLong's econo-centric view of the recent past won't please political and social historians, who might have trouble fitting, say, the Bolshevik Revolution or the rise and fall of Imperial Japan in five or even 50 propositions.

But I guarantee that DeLong's version of everything you ought to know about everything is a remarkably insightful and interesting read. Check it out before he turns the project into a book and starts charging you to read it. [*"The Shape of Twentieth Century Economic History" can be downloaded from www.j-bradford-delong.net.*]

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NOW, CLASS, MAKE YOUR SELECTIONS AND YOU'LL BE SENT TO DIFFERENT ROOMS TO MEET WITH PROFESSIONALS IN YOUR FIELD OF INTEREST.
FROM TIME TO TIME, NEW CATEGORIES ARE ADDED TO REFLECT AN EVOLVING SOCIETY.
e-entrepeneur
e-osteopath
e-BUS DRIVER
e-FIREFIGHTER
e-DOORMAN
-CARPENTE
-FIS
THE MOST RECENT ADDITION STIRRED SOME INITIAL CONTROVERSY BEFORE ITS VITAL CONTRIBUTION WAS ILLUMINATED.
GOOD MORNING! I'M CHET BLAH, A PROUD MEMBER OF THE STRUCTURALLY UNEMPLOYED.
Z
AND I'M PROUD OF ALL OF YOU FOR YOUR INTEREST IN MY PROFESSION. IT'S A BRAVE CHOICE AND A VITAL MISSION!
ON ONE LEVEL, SOCIETY PRESSURES EVERYONE TO BE EMPLOYED AND PLACES A STIGMA ON THOSE OF US WHO AREN'T.
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RAMPANT, RUNAWAY INFLATION!
SUSTAINABLE GROWTH WITH LOW INFLATION IN AN OPTIMAL U.S. ECONOMY REQUIRES 5 TO 6 MILLION UNEMPLOYED AT ALL TIMES!
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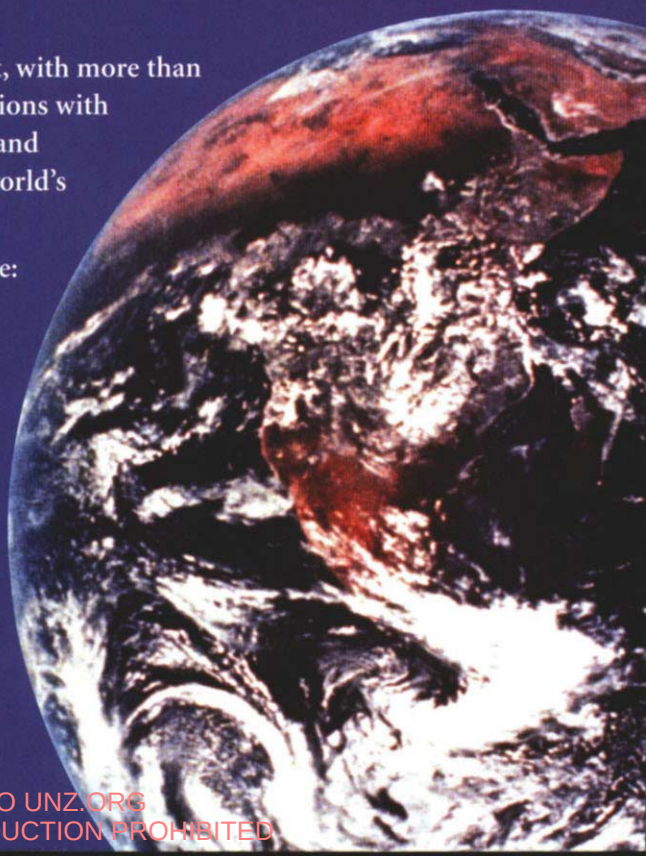

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ALBERT FISHLOW
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Stop grousing and trust the bureaucrats.

GEORGE AKERLOF, WILLIAM DICKENS AND GEORGE PERRY
On the Phillips curve.
Why a little inflation is good.

ROBERT REISCHAUER AND MICHAEL GLUCK
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JOEL KOTKIN
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Here come Houston, Denver, San Diego, etc.

PHIL COOK AND JENS LUDWIG
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You won't believe the numbers.

DAVID HENDERSON
On Peter Garber's *Famous First Bubbles.*

A cartoon strip by
MARK ALAN STAMATY,
creator of *The Washingtoon.*

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